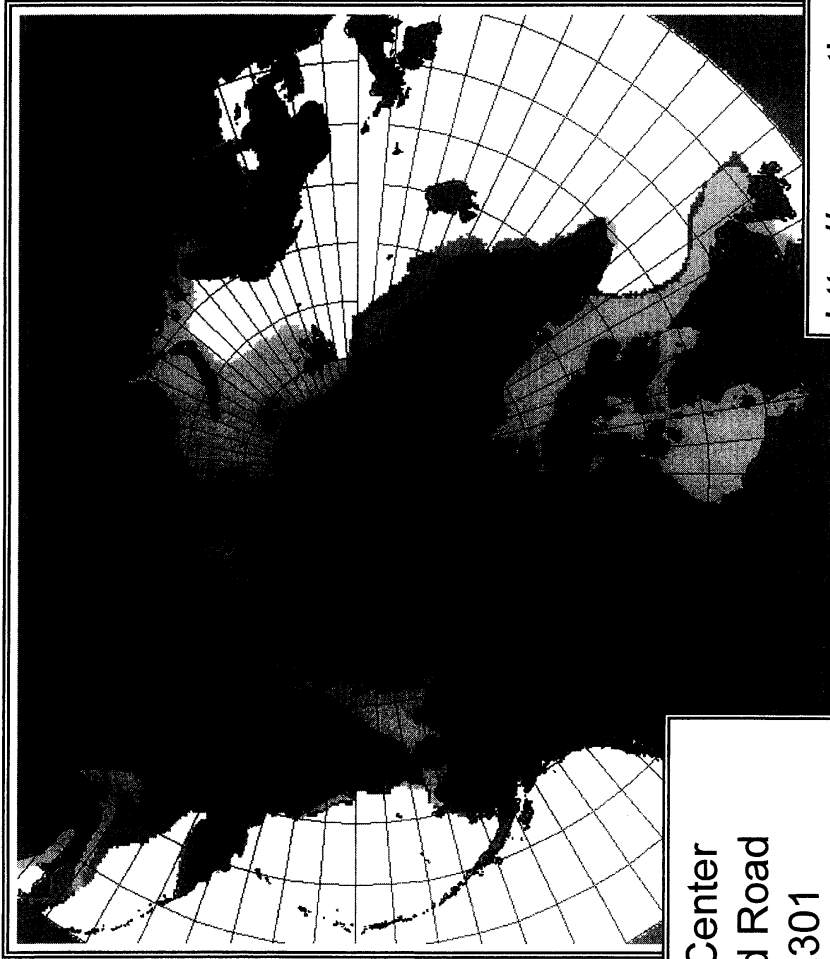


National Ice Center
Arctic Sea Ice Atlas
1996

19990722 020



National Ice Center
4251 Suitland Road
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<http://www.natice.noaa.gov>

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PREFACE

The National Ice Center (NIC), under sponsorship of the United States Navy, the United States Coast Guard, and the National Oceanic and Atmospheric Administration (NOAA), provides sea ice analyses encompassing the "Arctic" and the "Antarctic". These analyses continue the data set established under our previous name, the Joint Ice Center. These atlases continue the near real-time integration of remotely sensed data and point observations and differ only in that the Arctic and Antarctic are split into two separate publications per hemisphere per year.

This publication is the "Arctic Sea Ice Atlas" published in hard copy format by the NIC. The atlas contains weekly charts depicting the sea ice extent and coverage in the Northern Hemisphere from the first week of January through the last week of December 1996. Future annual atlases will be available in a digital format on CD-ROM through the National Snow and Ice Data Center (<http://www-nsidc.colorado.edu>). NSIDC is the official archive center for the NIC.

The NIC uses a wide variety of data sources in the production of sea ice analyses. Table 1 lists the data sources used to produce the Arctic weekly ice analyses contained in this publication. The line types used in the analyses provide metadata information with regard to sensor type. Solid lines depict boundaries derived from: point observations, Defense Meteorological Satellite Program Operational Line Scan (DMSP OLS) and NOAA Advanced Very High Resolution Radiometer (AVHRR) data. Dash-dash-dotted lines depict boundaries derived from DMSP Special Sensor Microwave Imager (SSM/I), and dashed lines depict boundaries derived from forecast models and climatology.

Please direct questions or comments to the NIC Liaison Branch, at phone number (301) 457-5303 extension 311 or 303, facsimile number (301)457-5300, or electronic mail address: liaison@natice.noaa.gov

From	To	Sensor Platform	Sensor and Type	Spectral Region	Resolution	Coverage
01-96	12-96	DMSP F-10, 11, 12, 13	OLS Fine: VIS IR SSM/I	0.4 to 1.1 μ m 10.2 to 12.8 μ m 19.35 and 37GHz	0.55 km 25 km	3,012km 3,012km
01-96	12-96	NOAA 12, 14	AVHRR: HRPT/LAC VIS NIR IR	0.58 to 0.68 μ m 0.72 to 1.10 μ m 3.55 to 3.93 μ m	1.1km at nadir; 2.5km at swath edge	4,000km
01-96	12-96	RADARSAT	AMI SAR	C- Band (5.3 GHz)	100km	500km

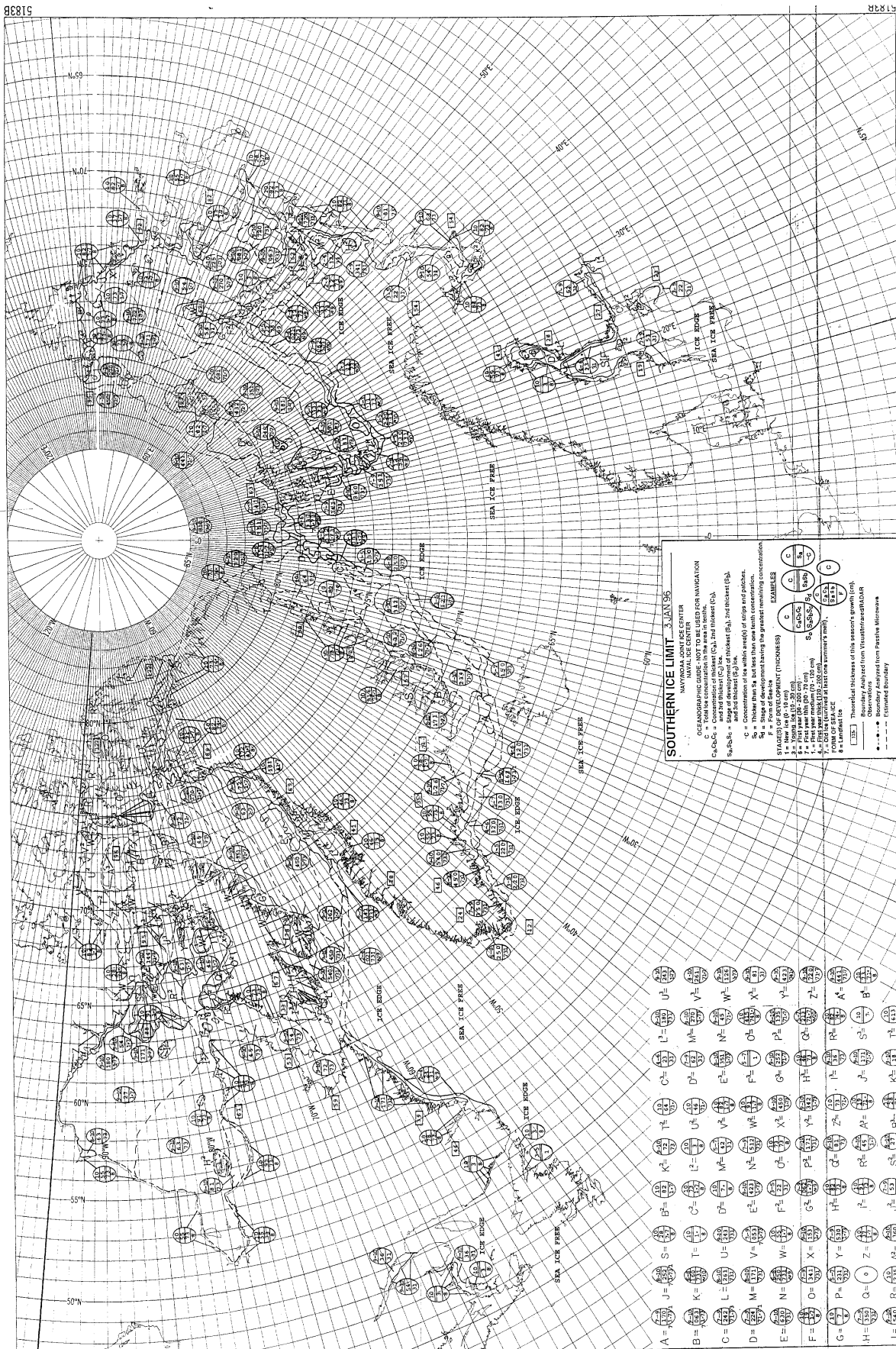
TABLE 1. 1996 Arctic Satellite Data Sources

Abbreviations and Acronyms:

AMI- Active Microwave Sensor
 AVHRR- Advanced Very High Resolution Radiometer
 cm- centimeter
 ERS- Earth Remote Sensing Satellite
 GHz- GigaHertz
 HRPT- High Resolution Picture transmission
 IR- Infrared
 km- kilometer
 LAC- Local Area Coverage
 NIR- Near Infrared
 OLS- Operational Linescan System
 RADARSAT- Radar Satellite
 SAR- Synthetic Aperture Radar
 SSM/I- Special Sensor Microwave Imager
 μ m- micrometer
 VIS- Visible
 RADARSAT- Radar Satellite
 SAR- Synthetic Aperture Radar

Prepared under the authority of Commander, Naval Oceanography Command,
 Stennis Space Center, MS 39529-5000

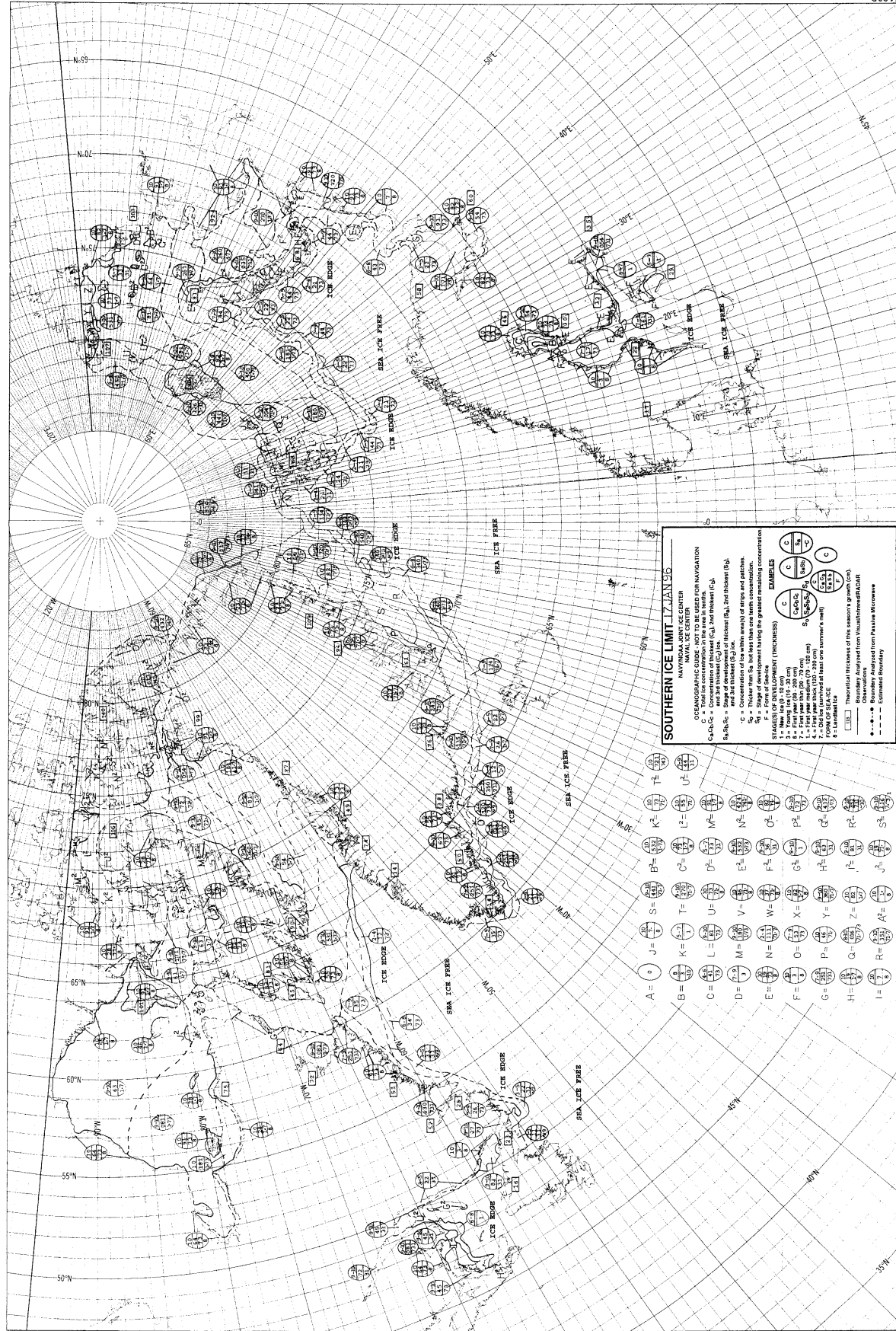






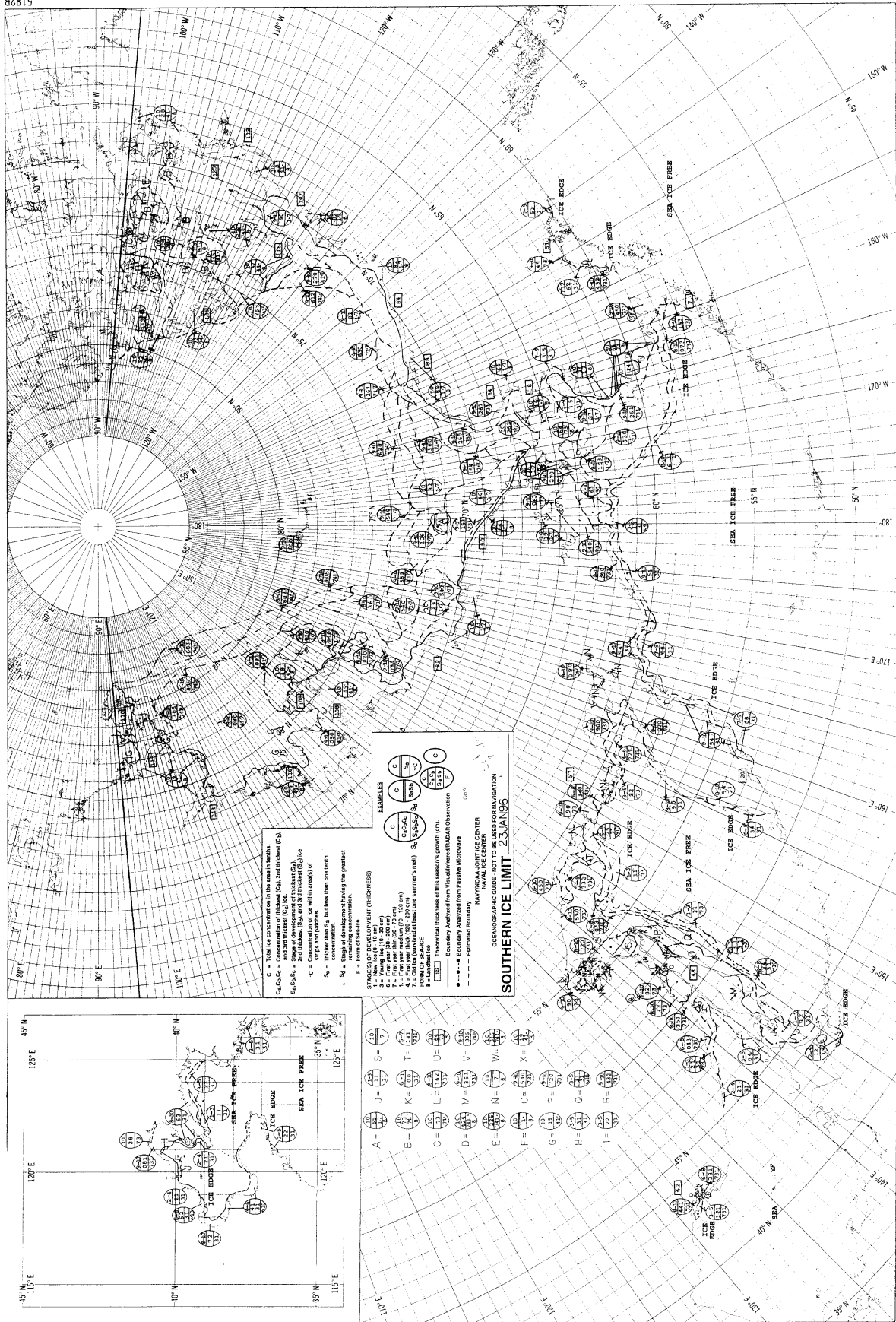






SOUTHERN ICE LIMIT 17 JAN 95
NAVAL ICE CENTER
NAVAL ICE CENTER

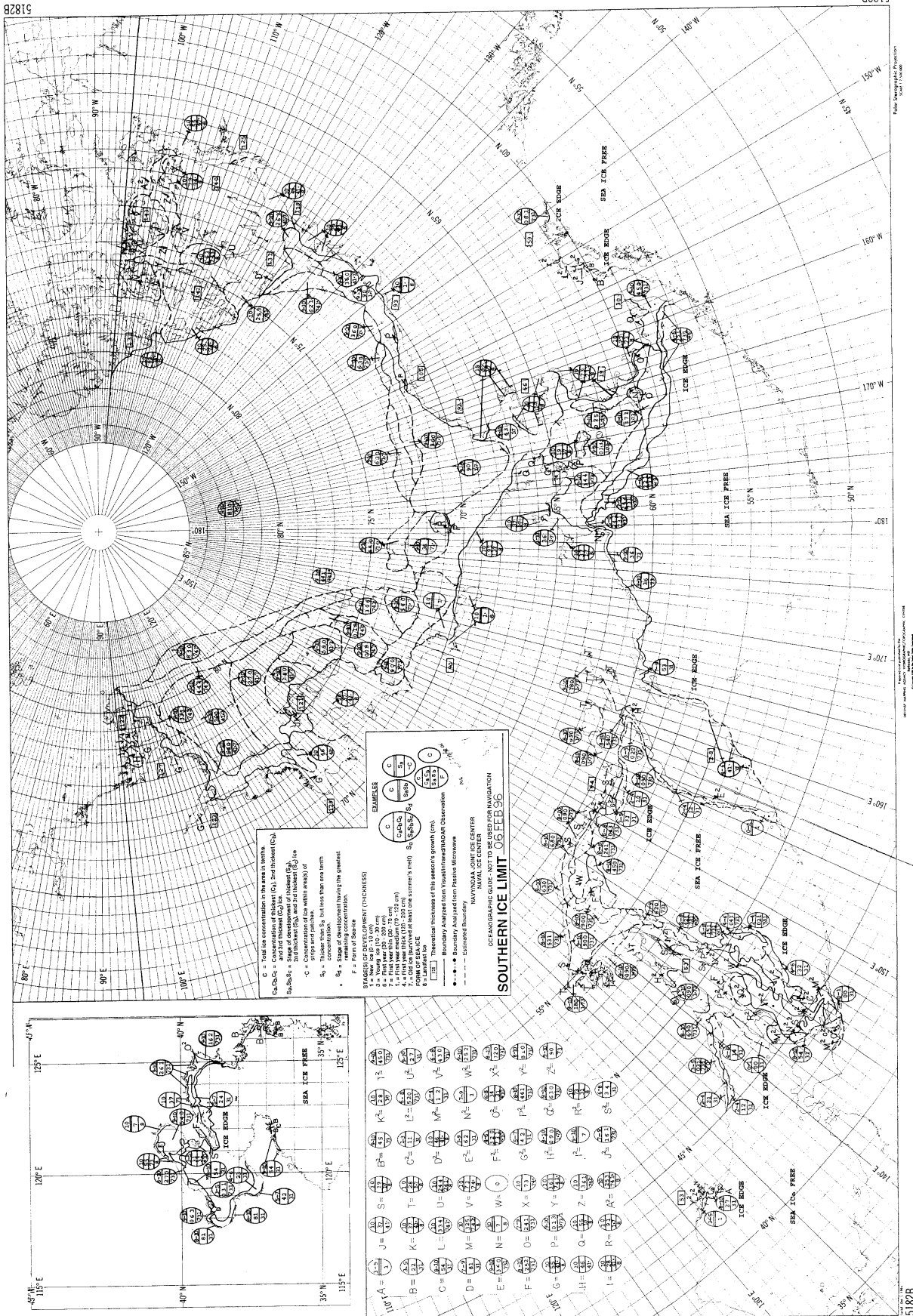
ICE LIMITS: NOT TO BE USED FOR NAVIGATION
C = CONCENTRATION OF THICKNESS (C₁) AND THICKNESS (C₂)
S₁-S₂-C₁-C₂ = Stage of development of thickest (S₁) and thickest (C₁) and ice thickness (S₂)
C = Thicker than S₁ but less than one turn concentration.
S₁ = Stage of development having the greatest remaining concentration
STAGES OF DEVELOPMENT (THICKNESS)
1 = New ice (0-10 cm)
2 = First year ice (10-20 cm)
3 = First year ice medium (20-30 cm)
4 = First year ice medium (30-40 cm)
5 = First year ice medium (40-50 cm)
6 = First year ice medium (50-60 cm)
7 = First year ice medium (60-70 cm)
8 = First year ice medium (70-80 cm)
9 = First year ice medium (80-90 cm)
10 = First year ice medium (90-100 cm)
11 = First year ice medium (100-110 cm)
12 = First year ice medium (110-120 cm)
13 = First year ice medium (120-130 cm)
14 = First year ice medium (130-140 cm)
15 = First year ice medium (140-150 cm)
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21 = First year ice medium (200-210 cm)
22 = First year ice medium (210-220 cm)
23 = First year ice medium (220-230 cm)
24 = First year ice medium (230-240 cm)
25 = First year ice medium (240-250 cm)
26 = First year ice medium (250-260 cm)
27 = First year ice medium (260-270 cm)
28 = First year ice medium (270-280 cm)
29 = First year ice medium (280-290 cm)
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36 = First year ice medium (350-360 cm)
37 = First year ice medium (360-370 cm)
38 = First year ice medium (370-380 cm)
39 = First year ice medium (380-390 cm)
40 = First year ice medium (390-400 cm)
41 = First year ice medium (400-410 cm)
42 = First year ice medium (410-420 cm)
43 = First year ice medium (420-430 cm)
44 = First year ice medium (430-440 cm)
45 = First year ice medium (440-450 cm)
46 = First year ice medium (450-460 cm)
47 = First year ice medium (460-470 cm)
48 = First year ice medium (470-480 cm)
49 = First year ice medium (480-490 cm)
50 = First year ice medium (490-500 cm)
51 = First year ice medium (500-510 cm)
52 = First year ice medium (510-520 cm)
53 = First year ice medium (520-530 cm)
54 = First year ice medium (530-540 cm)
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61 = First year ice medium (600-610 cm)
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64 = First year ice medium (630-640 cm)
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67 = First year ice medium (660-670 cm)
68 = First year ice medium (670-680 cm)
69 = First year ice medium (680-690 cm)
70 = First year ice medium (690-700 cm)
71 = First year ice medium (700-710 cm)
72 = First year ice medium (710-720 cm)
73 = First year ice medium (720-730 cm)
74 = First year ice medium (730-740 cm)
75 = First year ice medium (740-750 cm)
76 = First year ice medium (750-760 cm)
77 = First year ice medium (760-770 cm)
78 = First year ice medium (770-780 cm)
79 = First year ice medium (780-790 cm)
80 = First year ice medium (790-800 cm)
81 = First year ice medium (800-810 cm)
82 = First year ice medium (810-820 cm)
83 = First year ice medium (820-830 cm)
84 = First year ice medium (830-840 cm)
85 = First year ice medium (840-850 cm)
86 = First year ice medium (850-860 cm)
87 = First year ice medium (860-870 cm)
88 = First year ice medium (870-880 cm)
89 = First year ice medium (880-890 cm)
90 = First year ice medium (890-900 cm)
91 = First year ice medium (900-910 cm)
92 = First year ice medium (910-920 cm)
93 = First year ice medium (920-930 cm)
94 = First year ice medium (930-940 cm)
95 = First year ice medium (940-950 cm)
96 = First year ice medium (950-960 cm)
97 = First year ice medium (960-970 cm)
98 = First year ice medium (970-980 cm)
99 = First year ice medium (980-990 cm)
100 = First year ice medium (990-1000 cm)

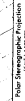


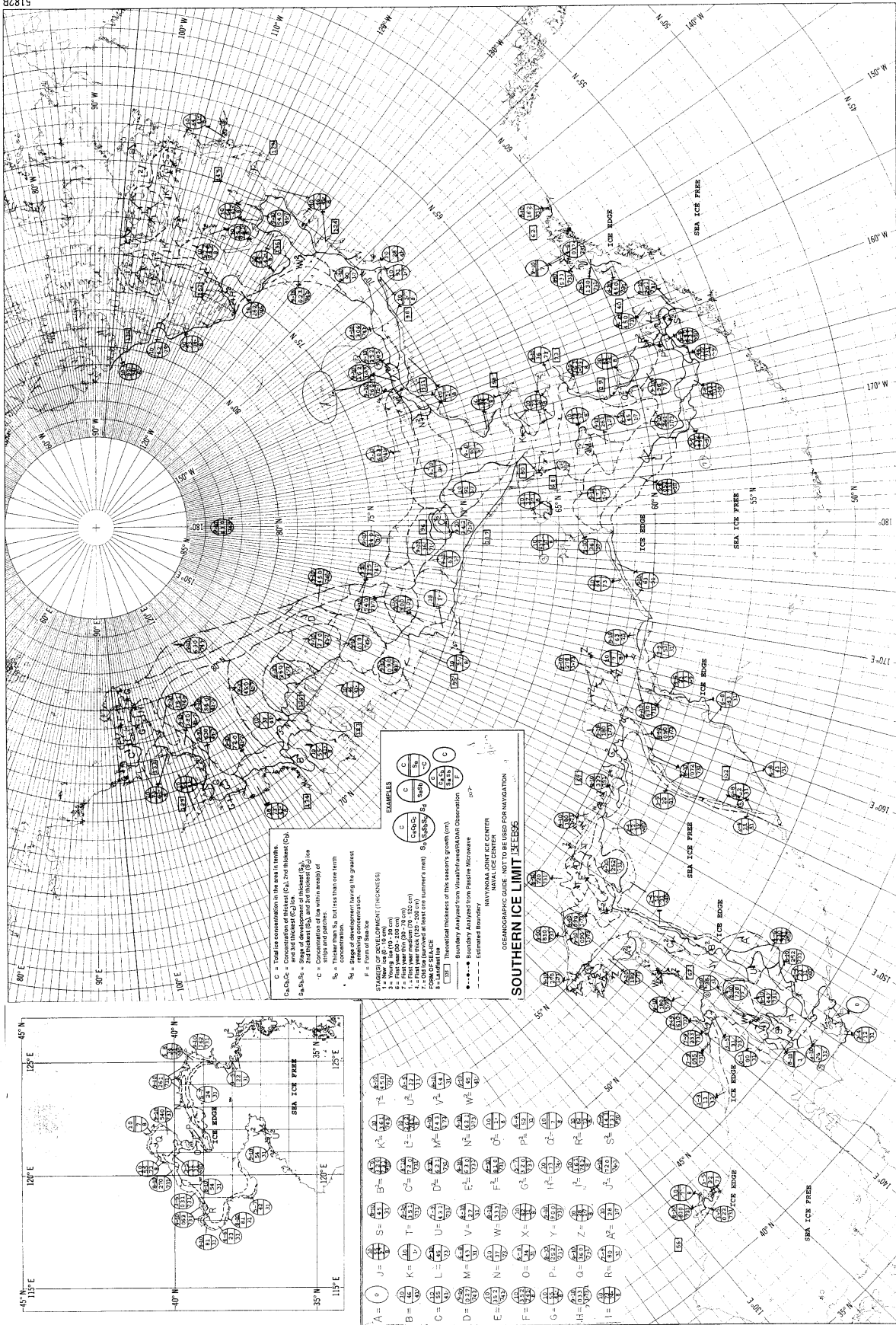






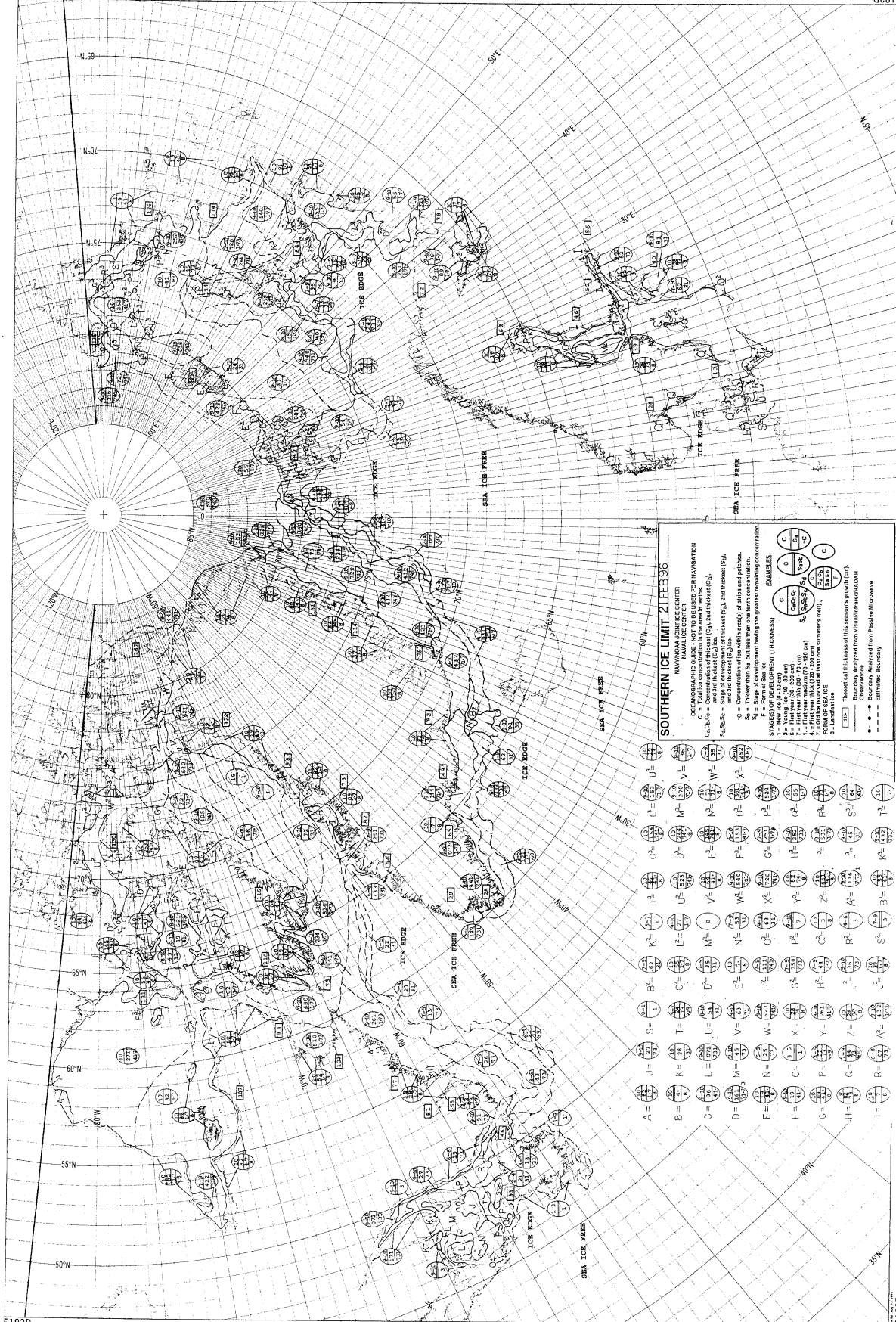












SOUTHERN ICE LIMIT 2111336

NAVYAL ICE CENTER

OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION

C_1, C_2, C_3 = Concentration of thickest (C₁), 2nd thickest (C₂), and 3rd thickest (C₃)

S_1, S_2, S_3 = Stage of development (S₁ of thickest (S₁), 2nd thickest (S₂), and 3rd thickest (S₃))

R_1 = Thicker than (R₁ has less than area) of ships and patches.

R_2 = Stage of development having the greatest remaining concentration

STAGES OF DEVELOPMENT (THICKNESS)

1 = New ice (0 - 10 cm)

2 = First year (10 - 100 cm)

3 = First year (100 - 200 cm)

4 = First year (200 - 300 cm)

5 = First year (300 - 400 cm)

6 = First year (400 - 500 cm)

7 = Old ice (500 cm or more)

BOUNDARY OF SEAS

1 = Theoretical boundary of the season's growth

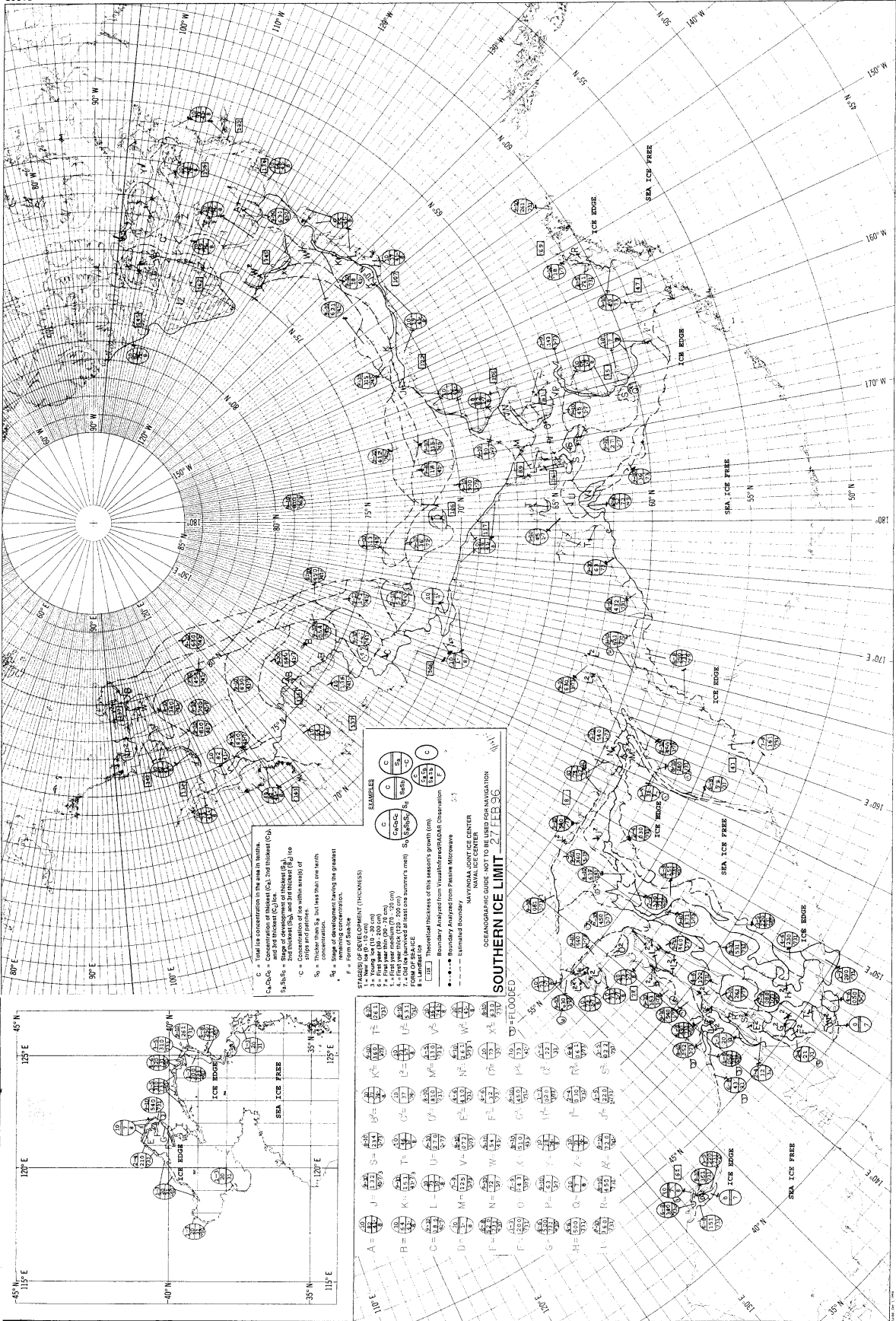
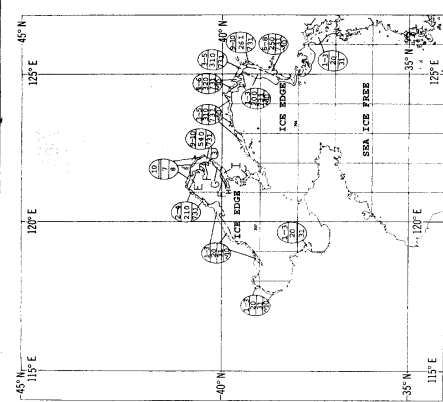
2 = Boundary Analyzed from Visual/Infrared

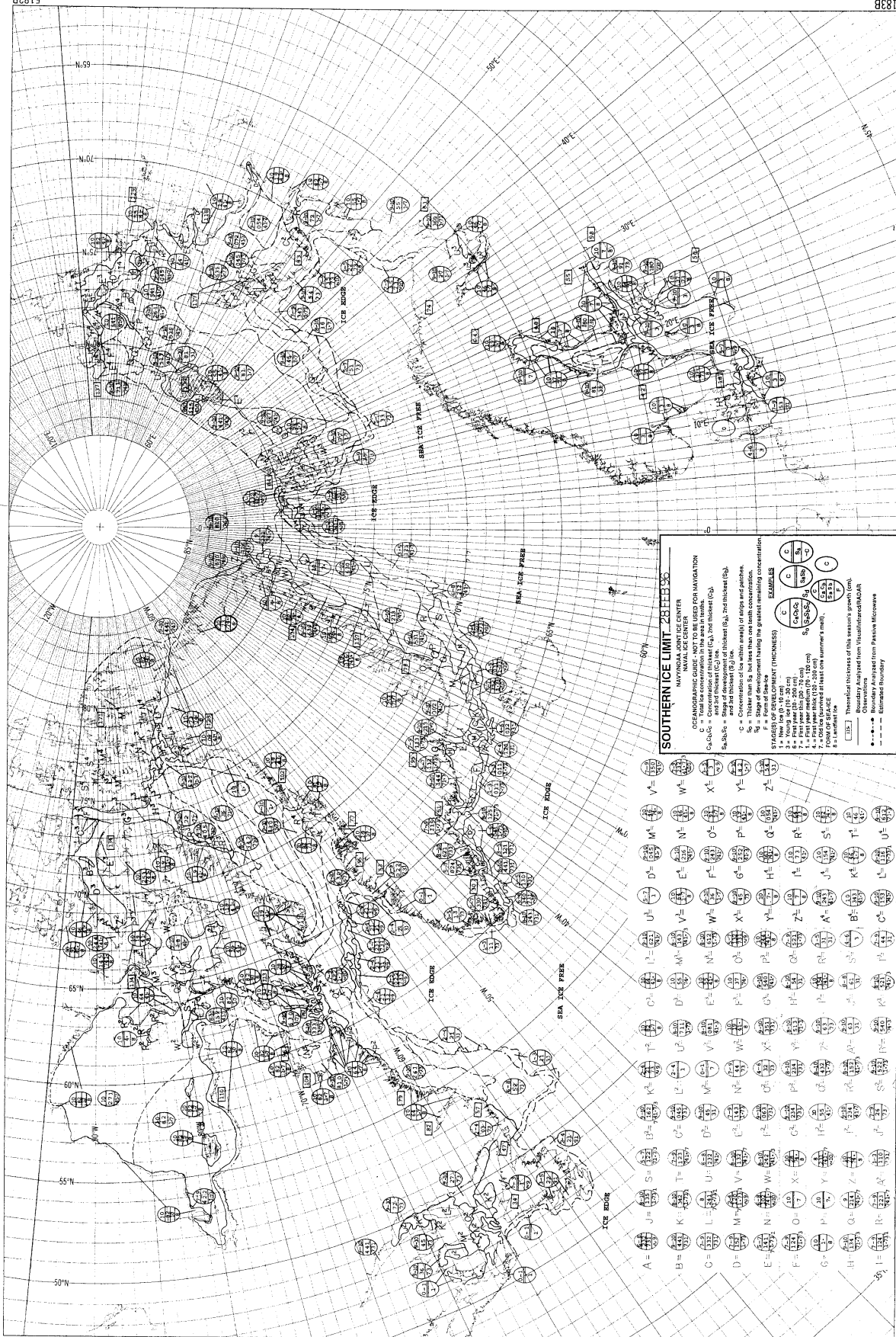
3 = Boundary Analyzed from Passive Microwave

4 = Estimated Boundary

EXAMPLES

$\frac{C_1}{S_1}$	$\frac{C_2}{S_2}$	$\frac{C_3}{S_3}$	$\frac{R_1}{R_2}$	$\frac{R_3}{R_4}$
$\frac{1}{1}$	$\frac{2}{2}$	$\frac{3}{3}$	$\frac{4}{4}$	$\frac{5}{5}$
$\frac{1}{2}$	$\frac{2}{3}$	$\frac{3}{4}$	$\frac{4}{5}$	$\frac{5}{6}$
$\frac{1}{3}$	$\frac{2}{4}$	$\frac{3}{5}$	$\frac{4}{6}$	$\frac{5}{7}$
$\frac{1}{4}$	$\frac{2}{5}$	$\frac{3}{6}$	$\frac{4}{7}$	$\frac{5}{8}$
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$\frac{1}{6}$	$\frac{2}{7}$	$\frac{3}{8}$	$\frac{4}{9}$	$\frac{5}{10}$
$\frac{1}{7}$	$\frac{2}{8}$	$\frac{3}{9}$	$\frac{4}{10}$	$\frac{5}{11}$
$\frac{1}{8}$	$\frac{2}{9}$	$\frac{3}{10}$	$\frac{4}{11}$	$\frac{5}{12}$
$\frac{1}{9}$	$\frac{2}{10}$	$\frac{3}{11}$	$\frac{4}{12}$	$\frac{5}{13}$
$\frac{1}{10}$	$\frac{2}{11}$	$\frac{3}{12}$	$\frac{4}{13}$	$\frac{5}{14}$
$\frac{1}{11}$	$\frac{2}{12}$	$\frac{3}{13}$	$\frac{4}{14}$	$\frac{5}{15}$
$\frac{1}{12}$	$\frac{2}{13}$	$\frac{3}{14}$	$\frac{4}{15}$	$\frac{5}{16}$
$\frac{1}{13}$	$\frac{2}{14}$	$\frac{3}{15}$	$\frac{4}{16}$	$\frac{5}{17}$
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$\frac{1}{16}$	$\frac{2}{17}$	$\frac{3}{18}$	$\frac{4}{19}$	$\frac{5}{20}$
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$\frac{1}{18}$	$\frac{2}{19}$	$\frac{3}{20}$	$\frac{4}{21}$	$\frac{5}{22}$
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SOUTHERN ICE LIMIT 28 FEB 68

NAVYAL CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
This guide is for use in the area in which the ice limit is shown. It is not to be used for navigation purposes. It is a guide only and should not be used as a basis for navigation. It is a guide only and should not be used as a basis for navigation.

SYMBOLS

ICE TYPE

ICE THICKNESS

ICE DENSITY

ICE AGE

ICE FORM

ICE CONDITION

ICE LIMIT

ICE EDGE

SEA ICE FREE

ICE DENSITY

ICE AGE

ICE FORM

ICE CONDITION

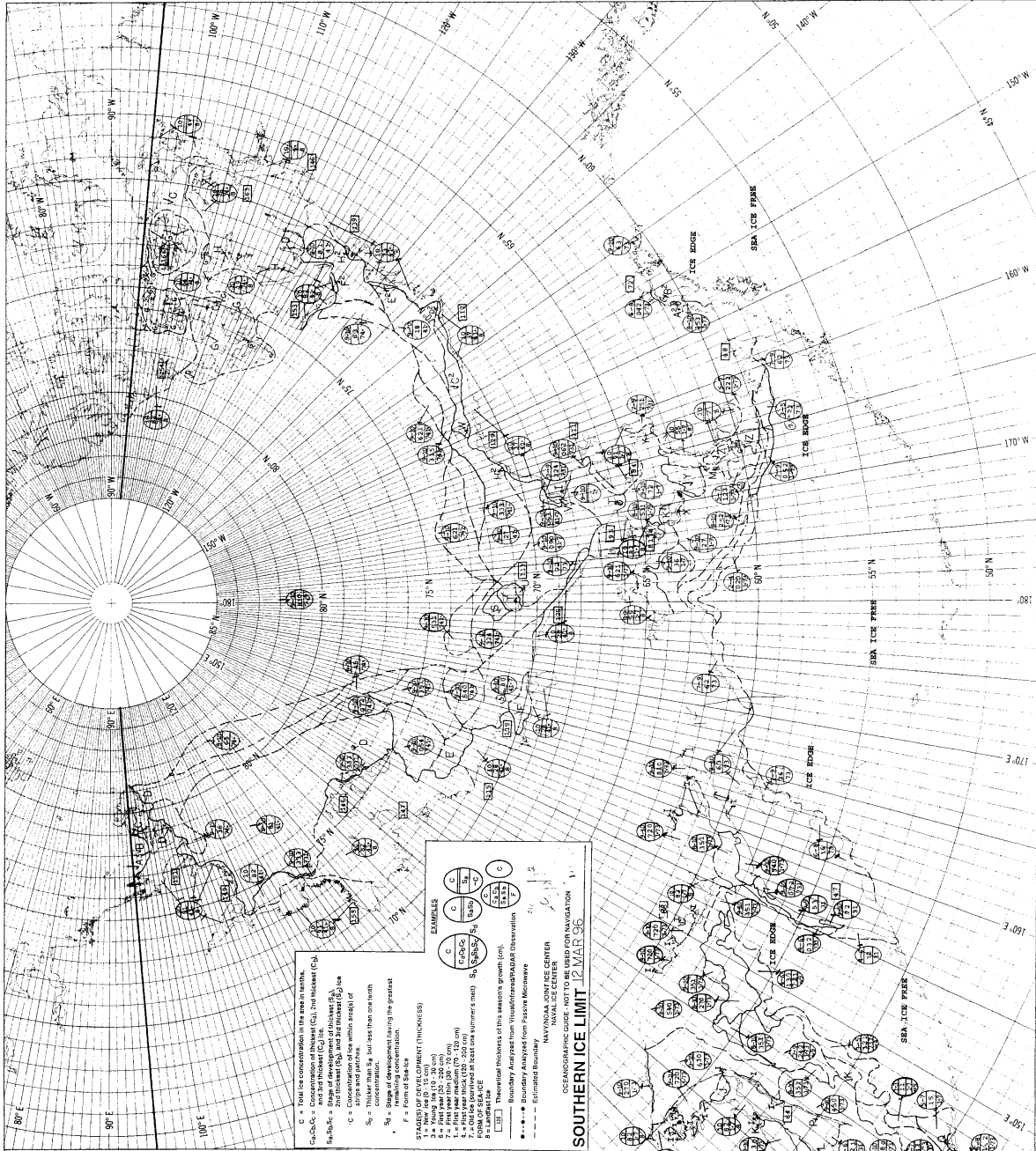
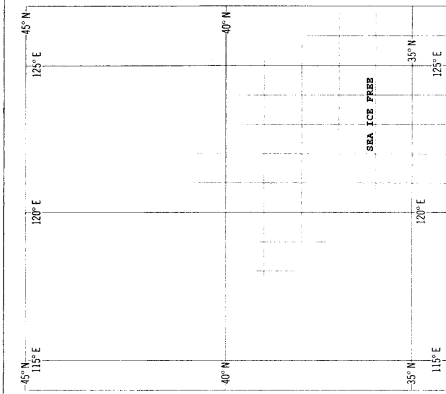
ICE LIMIT

ICE EDGE

SEA ICE FREE







STAGES OF DEVELOPMENT (THICKNESS)

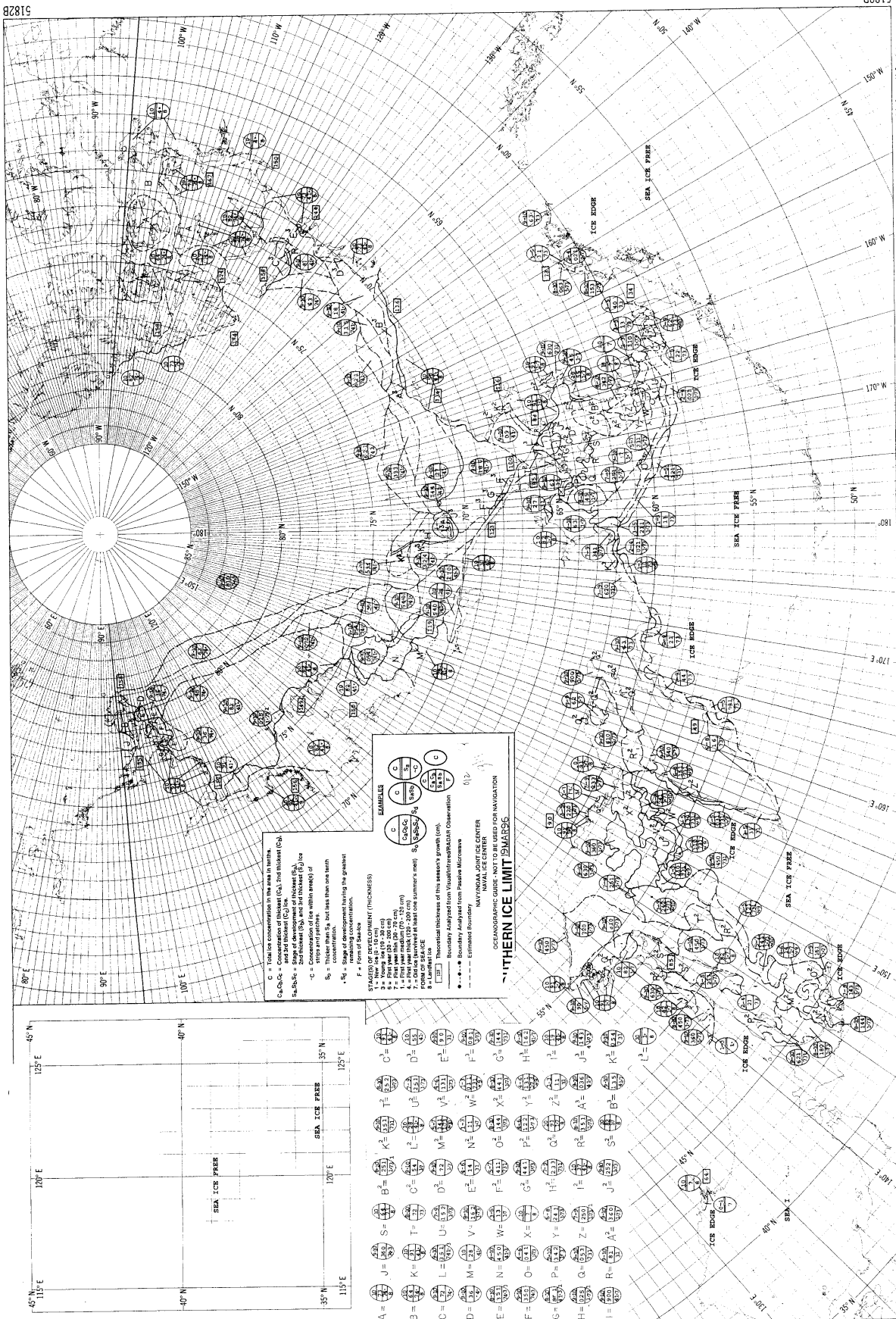
1 = Young ice (10-30 cm)
2 = First year medium (30-100 cm)
3 = First year medium (100-150 cm)
4 = First year medium (150-200 cm)
5 = First year medium (200-250 cm)
6 = First year medium (250-300 cm)
7 = Old ice (thawed at least one summer's melt)
8 = Landfast ice

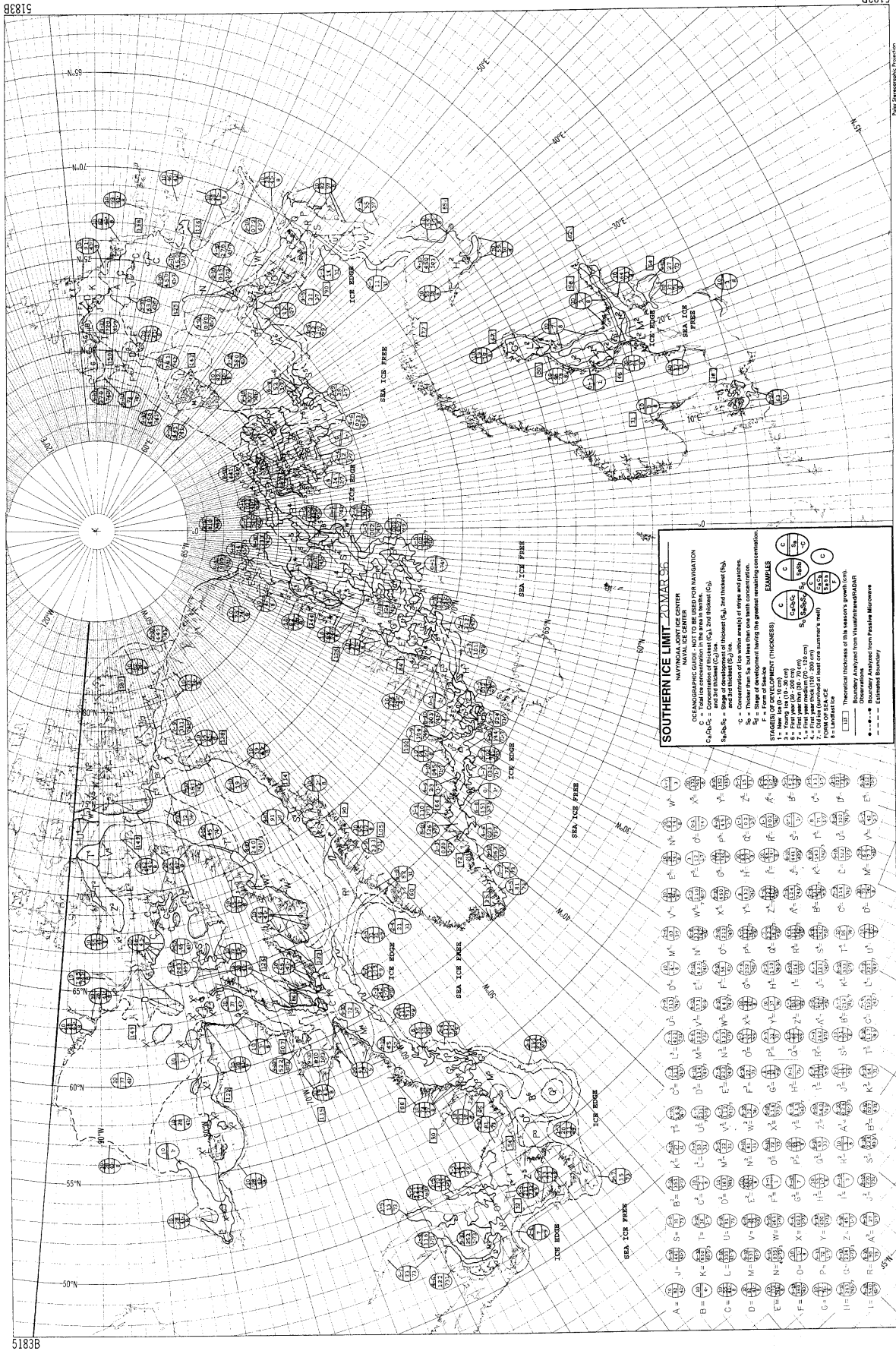
EXAMPLES

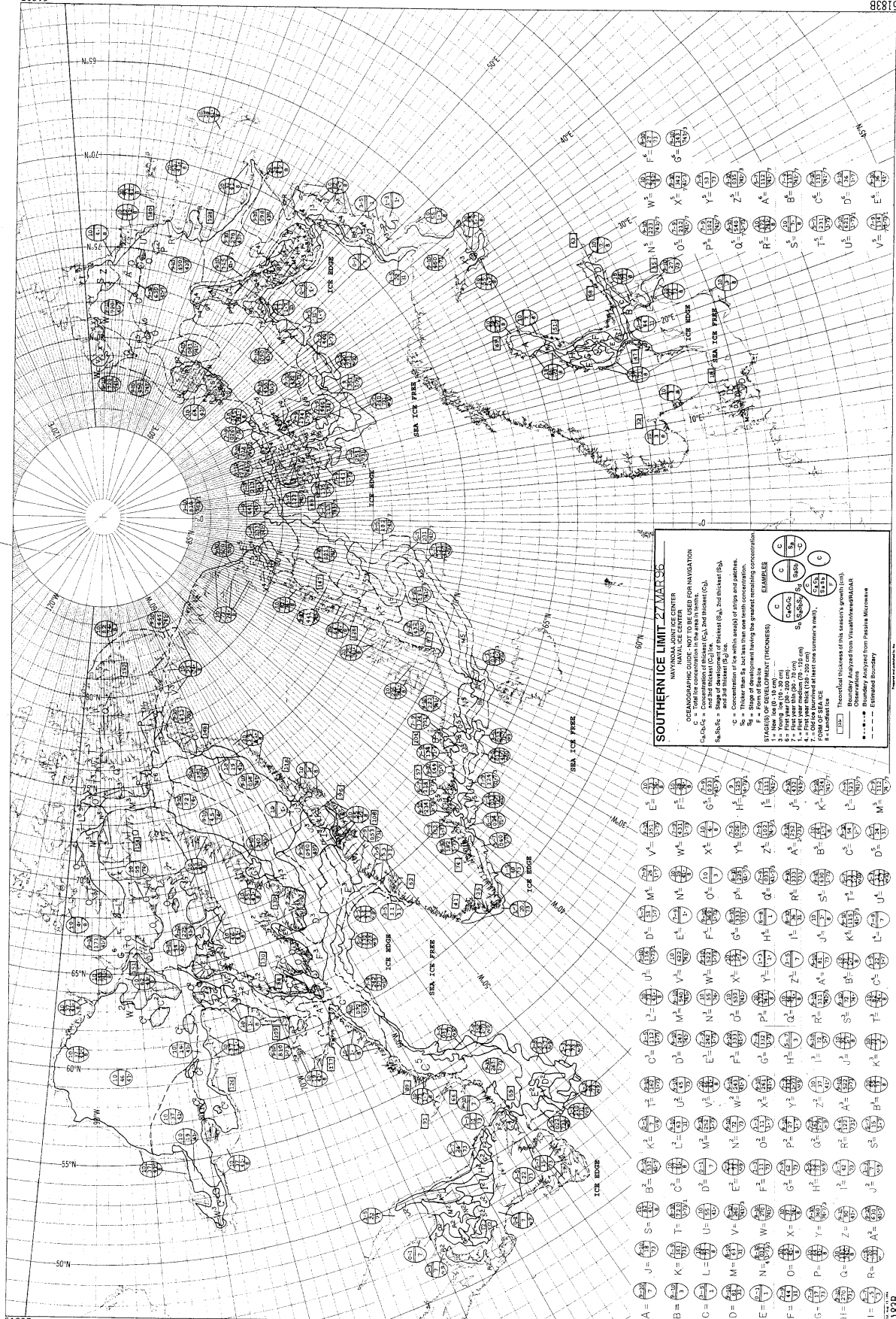
1. $\frac{C}{C_0} = \frac{1}{2}$
2. $\frac{C}{C_0} = \frac{1}{3}$
3. $\frac{C}{C_0} = \frac{1}{4}$
4. $\frac{C}{C_0} = \frac{1}{5}$
5. $\frac{C}{C_0} = \frac{1}{6}$
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96. $\frac{C}{C_0} = \frac{1}{97}$
97. $\frac{C}{C_0} = \frac{1}{98}$
98. $\frac{C}{C_0} = \frac{1}{99}$
99. $\frac{C}{C_0} = \frac{1}{100}$











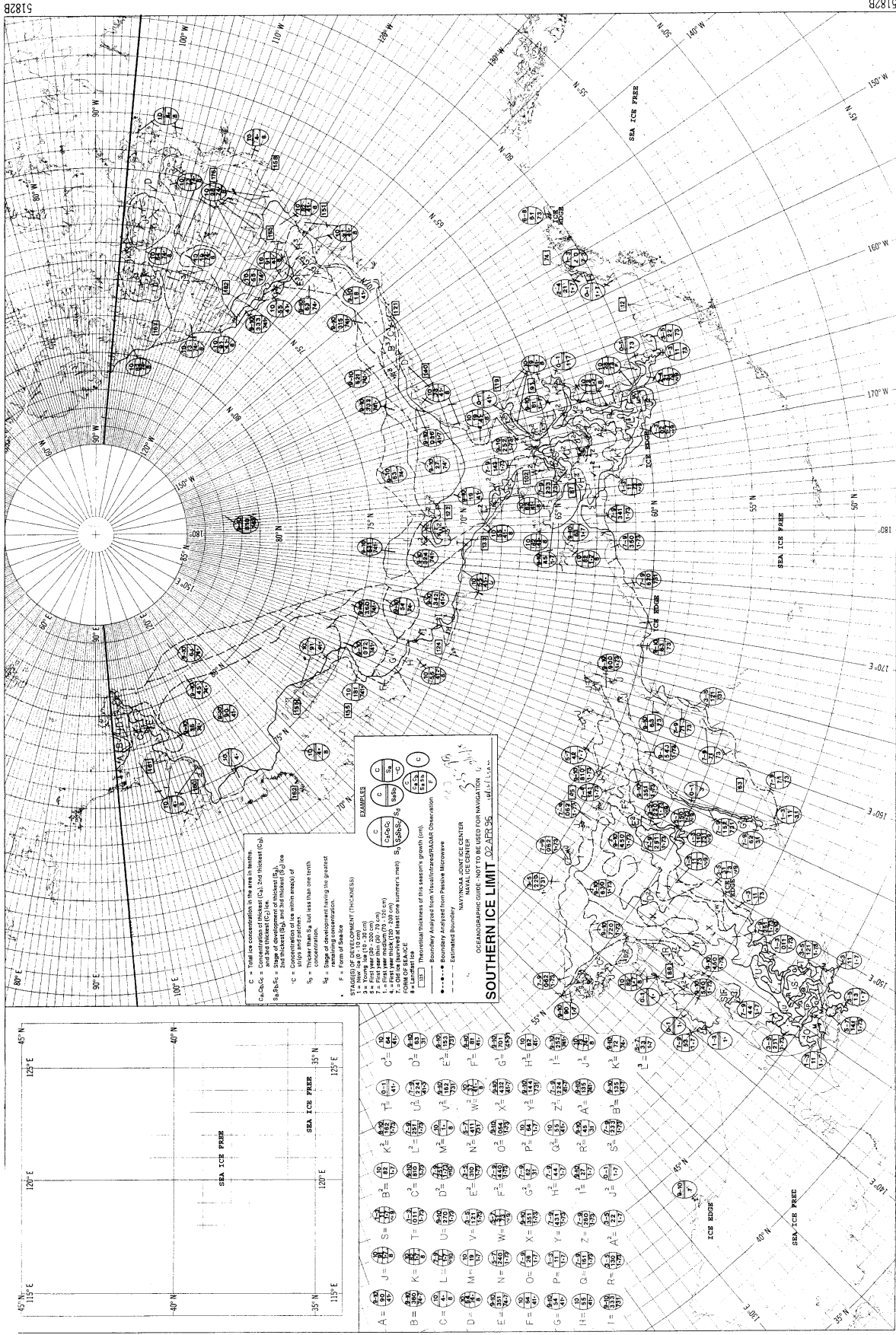
SOUTHERN ICE LIMIT 27 MAR 56

NAVY/Joint ICE CENTER
OCEANOGRAPHIC DIVISION FOR NAVIGATION

C = Total ice concentration in the area in tenths.
C₁, C₂, C₃ = Range of development of thickest (R₁), 2nd thickest (R₂), and 3rd thickest (R₃) ice.
R₁, R₂, R₃ = Range of development of thickest (R₁), 2nd thickest (R₂), and 3rd thickest (R₃) ice.
R₁, R₂, R₃ = Range of development of thickest (R₁), 2nd thickest (R₂), and 3rd thickest (R₃) ice.
R₁, R₂, R₃ = Range of development of thickest (R₁), 2nd thickest (R₂), and 3rd thickest (R₃) ice.

STAGES OF DEVELOPMENT (THICKNESS)

1 = Young ice (10 - 30 cm)
2 = First year ice (30 - 70 cm)
3 = First year ice (70 - 100 cm)
4 = First year ice (100 - 150 cm)
5 = First year ice (150 - 200 cm)
6 = First year ice (200 - 250 cm)
7 = First year ice (250 - 300 cm)
8 = First year ice (300 - 350 cm)
9 = First year ice (350 - 400 cm)
10 = First year ice (400 - 450 cm)
11 = First year ice (450 - 500 cm)
12 = First year ice (500 - 550 cm)
13 = First year ice (550 - 600 cm)
14 = First year ice (600 - 650 cm)
15 = First year ice (650 - 700 cm)
16 = First year ice (700 - 750 cm)
17 = First year ice (750 - 800 cm)
18 = First year ice (800 - 850 cm)
19 = First year ice (850 - 900 cm)
20 = First year ice (900 - 950 cm)
21 = First year ice (950 - 1000 cm)
22 = First year ice (1000 - 1050 cm)
23 = First year ice (1050 - 1100 cm)
24 = First year ice (1100 - 1150 cm)
25 = First year ice (1150 - 1200 cm)
26 = First year ice (1200 - 1250 cm)
27 = First year ice (1250 - 1300 cm)
28 = First year ice (1300 - 1350 cm)
29 = First year ice (1350 - 1400 cm)
30 = First year ice (1400 - 1450 cm)
31 = First year ice (1450 - 1500 cm)
32 = First year ice (1500 - 1550 cm)
33 = First year ice (1550 - 1600 cm)
34 = First year ice (1600 - 1650 cm)
35 = First year ice (1650 - 1700 cm)
36 = First year ice (1700 - 1750 cm)
37 = First year ice (1750 - 1800 cm)
38 = First year ice (1800 - 1850 cm)
39 = First year ice (1850 - 1900 cm)
40 = First year ice (1900 - 1950 cm)
41 = First year ice (1950 - 2000 cm)
42 = First year ice (2000 - 2050 cm)
43 = First year ice (2050 - 2100 cm)
44 = First year ice (2100 - 2150 cm)
45 = First year ice (2150 - 2200 cm)
46 = First year ice (2200 - 2250 cm)
47 = First year ice (2250 - 2300 cm)
48 = First year ice (2300 - 2350 cm)
49 = First year ice (2350 - 2400 cm)
50 = First year ice (2400 - 2450 cm)
51 = First year ice (2450 - 2500 cm)
52 = First year ice (2500 - 2550 cm)
53 = First year ice (2550 - 2600 cm)
54 = First year ice (2600 - 2650 cm)
55 = First year ice (2650 - 2700 cm)
56 = First year ice (2700 - 2750 cm)
57 = First year ice (2750 - 2800 cm)
58 = First year ice (2800 - 2850 cm)
59 = First year ice (2850 - 2900 cm)
60 = First year ice (2900 - 2950 cm)
61 = First year ice (2950 - 3000 cm)
62 = First year ice (3000 - 3050 cm)
63 = First year ice (3050 - 3100 cm)
64 = First year ice (3100 - 3150 cm)
65 = First year ice (3150 - 3200 cm)
66 = First year ice (3200 - 3250 cm)
67 = First year ice (3250 - 3300 cm)
68 = First year ice (3300 - 3350 cm)
69 = First year ice (3350 - 3400 cm)
70 = First year ice (3400 - 3450 cm)
71 = First year ice (3450 - 3500 cm)
72 = First year ice (3500 - 3550 cm)
73 = First year ice (3550 - 3600 cm)
74 = First year ice (3600 - 3650 cm)
75 = First year ice (3650 - 3700 cm)
76 = First year ice (3700 - 3750 cm)
77 = First year ice (3750 - 3800 cm)
78 = First year ice (3800 - 3850 cm)
79 = First year ice (3850 - 3900 cm)
80 = First year ice (3900 - 3950 cm)
81 = First year ice (3950 - 4000 cm)
82 = First year ice (4000 - 4050 cm)
83 = First year ice (4050 - 4100 cm)
84 = First year ice (4100 - 4150 cm)
85 = First year ice (4150 - 4200 cm)
86 = First year ice (4200 - 4250 cm)
87 = First year ice (4250 - 4300 cm)
88 = First year ice (4300 - 4350 cm)
89 = First year ice (4350 - 4400 cm)
90 = First year ice (4400 - 4450 cm)
91 = First year ice (4450 - 4500 cm)
92 = First year ice (4500 - 4550 cm)
93 = First year ice (4550 - 4600 cm)
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95 = First year ice (4650 - 4700 cm)
96 = First year ice (4700 - 4750 cm)
97 = First year ice (4750 - 4800 cm)
98 = First year ice (4800 - 4850 cm)
99 = First year ice (4850 - 4900 cm)
100 = First year ice (4900 - 4950 cm)
101 = First year ice (4950 - 5000 cm)
102 = First year ice (5000 - 5050 cm)
103 = First year ice (5050 - 5100 cm)
104 = First year ice (5100 - 5150 cm)
105 = First year ice (5150 - 5200 cm)
106 = First year ice (5200 - 5250 cm)
107 = First year ice (5250 - 5300 cm)
108 = First year ice (5300 - 5350 cm)
109 = First year ice (5350 - 5400 cm)
110 = First year ice (5400 - 5450 cm)
111 = First year ice (5450 - 5500 cm)
112 = First year ice (5500 - 5550 cm)
113 = First year ice (5550 - 5600 cm)
114 = First year ice (5600 - 5650 cm)
115 = First year ice (5650 - 5700 cm)
116 = First year ice (5700 - 5750 cm)
117 = First year ice (5750 - 5800 cm)
118 = First year ice (5800 - 5850 cm)
119 = First year ice (5850 - 5900 cm)
120 = First year ice (5900 - 5950 cm)
121 = First year ice (5950 - 6000 cm)
122 = First year ice (6000 - 6050 cm)
123 = First year ice (6050 - 6100 cm)
124 = First year ice (6100 - 6150 cm)
125 = First year ice (6150 - 6200 cm)
126 = First year ice (6200 - 6250 cm)
127 = First year ice (6250 - 6300 cm)
128 = First year ice (6300 - 6350 cm)
129 = First year ice (6350 - 6400 cm)
130 = First year ice (6400 - 6450 cm)
131 = First year ice (6450 - 6500 cm)
132 = First year ice (6500 - 6550 cm)
133 = First year ice (6550 - 6600 cm)
134 = First year ice (6600 - 6650 cm)
135 = First year ice (6650 - 6700 cm)
136 = First year ice (6700 - 6750 cm)
137 = First year ice (6750 - 6800 cm)
138 = First year ice (6800 - 6850 cm)
139 = First year ice (6850 - 6900 cm)
140 = First year ice (6900 - 6950 cm)
141 = First year ice (6950 - 7000 cm)
142 = First year ice (7000 - 7050 cm)
143 = First year ice (7050 - 7100 cm)
144 = First year ice (7100 - 7150 cm)
145 = First year ice (7150 - 7200 cm)
146 = First year ice (7200 - 7250 cm)
147 = First year ice (7250 - 7300 cm)
148 = First year ice (7300 - 7350 cm)
149 = First year ice (7350 - 7400 cm)
150 = First year ice (7400 - 7450 cm)
151 = First year ice (7450 - 7500 cm)
152 = First year ice (7500 - 7550 cm)
153 = First year ice (7550 - 7600 cm)
154 = First year ice (7600 - 7650 cm)
155 = First year ice (7650 - 7700 cm)
156 = First year ice (7700 - 7750 cm)
157 = First year ice (7750 - 7800 cm)
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159 = First year ice (7850 - 7900 cm)
160 = First year ice (7900 - 7950 cm)
161 = First year ice (7950 - 8000 cm)
162 = First year ice (8000 - 8050 cm)
163 = First year ice (8050 - 8100 cm)
164 = First year ice (8100 - 8150 cm)
165 = First year ice (8150 - 8200 cm)
166 = First year ice (8200 - 8250 cm)
167 = First year ice (8250 - 8300 cm)
168 = First year ice (8300 - 8350 cm)
169 = First year ice (8350 - 8400 cm)
170 = First year ice (8400 - 8450 cm)
171 = First year ice (8450 - 8500 cm)
172 = First year ice (8500 - 8550 cm)
173 = First year ice (8550 - 8600 cm)
174 = First year ice (8600 - 8650 cm)
175 = First year ice (8650 - 8700 cm)
176 = First year ice (8700 - 8750 cm)
177 = First year ice (8750 - 8800 cm)
178 = First year ice (8800 - 8850 cm)
179 = First year ice (8850 - 8900 cm)
180 = First year ice (8900 - 8950 cm)
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184 = First year ice (9100 - 9150 cm)
185 = First year ice (9150 - 9200 cm)
186 = First year ice (9200 - 9250 cm)
187 = First year ice (9250 - 9300 cm)
188 = First year ice (9300 - 9350 cm)
189 = First year ice (9350 - 9400 cm)
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195 = First year ice (9650 - 9700 cm)
196 = First year ice (9700 - 9750 cm)
197 = First year ice (9750 - 9800 cm)
198 = First year ice (9800 - 9850 cm)
199 = First year ice (9850 - 9900 cm)
200 = First year ice (9900 - 9950 cm)
201 = First year ice (9950 - 10000 cm)



5182B

5182B

5182B

5182B

5182B

5182B

5182B

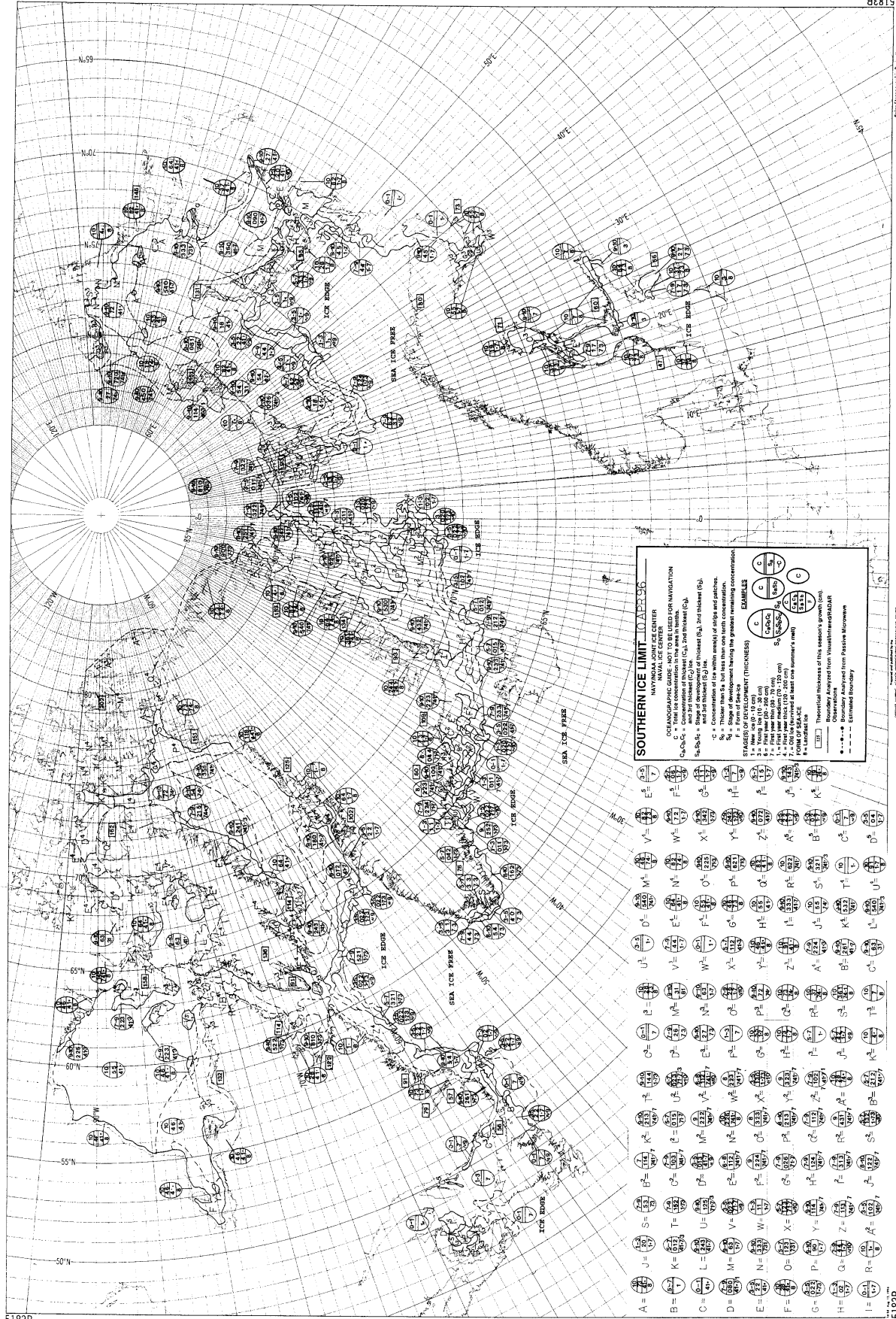
5182B

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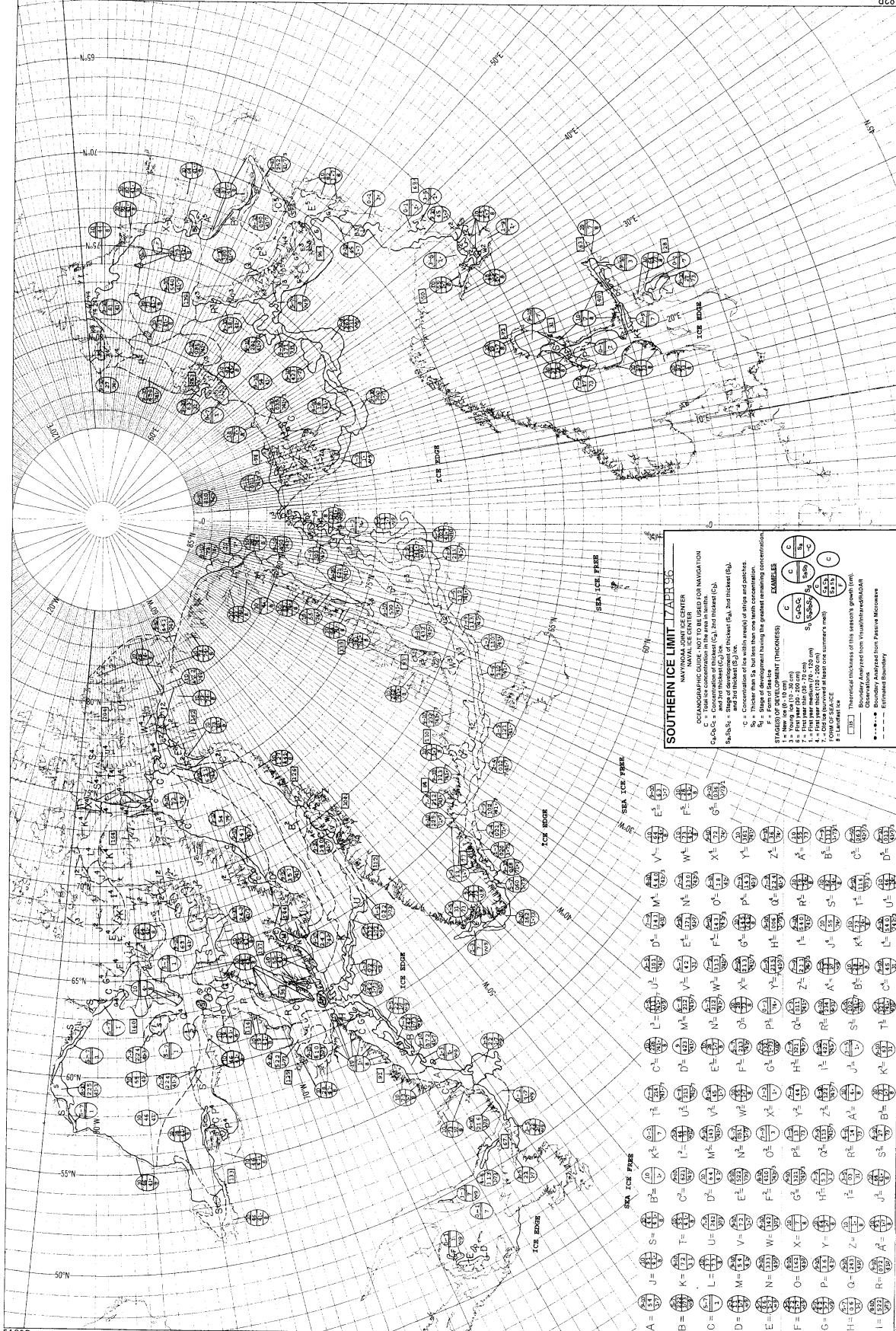
SOUTHERN ICE LIMIT 10 15 20 25 30 35 40 45 50 55 60 65

NAVY OCEANOGRAPHIC OFFICE
NAVAL ICE CENTER

CEASAR MAPS: GUIDE - NOT TO BE USED FOR NAVIGATION
C = Concentration of ice (C₁, C₂, C₃)
C₁C₂C₃ = Concentration of ice (C₁, C₂, C₃)
S₁S₂S₃ = Stage of development of ice (S₁, S₂, S₃)
S₁ = Thin ice (S₁)
S₂ = Medium ice (S₂)
S₃ = Thick ice (S₃)
S₄ = Very thick ice (S₄)
S₅ = Icebergs (S₅)
S₆ = Icebergs (S₆)
S₇ = Icebergs (S₇)
S₈ = Icebergs (S₈)
S₉ = Icebergs (S₉)
S₁₀ = Icebergs (S₁₀)
S₁₁ = Icebergs (S₁₁)
S₁₂ = Icebergs (S₁₂)
S₁₃ = Icebergs (S₁₃)
S₁₄ = Icebergs (S₁₄)
S₁₅ = Icebergs (S₁₅)
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S₁₈ = Icebergs (S₁₈)
S₁₉ = Icebergs (S₁₉)
S₂₀ = Icebergs (S₂₀)
S₂₁ = Icebergs (S₂₁)
S₂₂ = Icebergs (S₂₂)
S₂₃ = Icebergs (S₂₃)
S₂₄ = Icebergs (S₂₄)
S₂₅ = Icebergs (S₂₅)
S₂₆ = Icebergs (S₂₆)
S₂₇ = Icebergs (S₂₇)
S₂₈ = Icebergs (S₂₈)
S₂₉ = Icebergs (S₂₉)
S₃₀ = Icebergs (S₃₀)
S₃₁ = Icebergs (S₃₁)
S₃₂ = Icebergs (S₃₂)
S₃₃ = Icebergs (S₃₃)
S₃₄ = Icebergs (S₃₄)
S₃₅ = Icebergs (S₃₅)
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S₃₉ = Icebergs (S₃₉)
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S₈₇ = Icebergs (S₈₇)
S₈₈ = Icebergs (S₈₈)
S₈₉ = Icebergs (S₈₉)
S₉₀ = Icebergs (S₉₀)
S₉₁ = Icebergs (S₉₁)
S₉₂ = Icebergs (S₉₂)
S₉₃ = Icebergs (S₉₃)
S₉₄ = Icebergs (S₉₄)
S₉₅ = Icebergs (S₉₅)
S₉₆ = Icebergs (S₉₆)
S₉₇ = Icebergs (S₉₇)
S₉₈ = Icebergs (S₉₈)
S₉₉ = Icebergs (S₉₉)
S₁₀₀ = Icebergs (S₁₀₀)

Revised September 1964
Navy Oceanographic Office





SOUTHERN ICE LIMIT MAP 5183B
NAVY ICE CENTER
NAVAL ICE CENTER

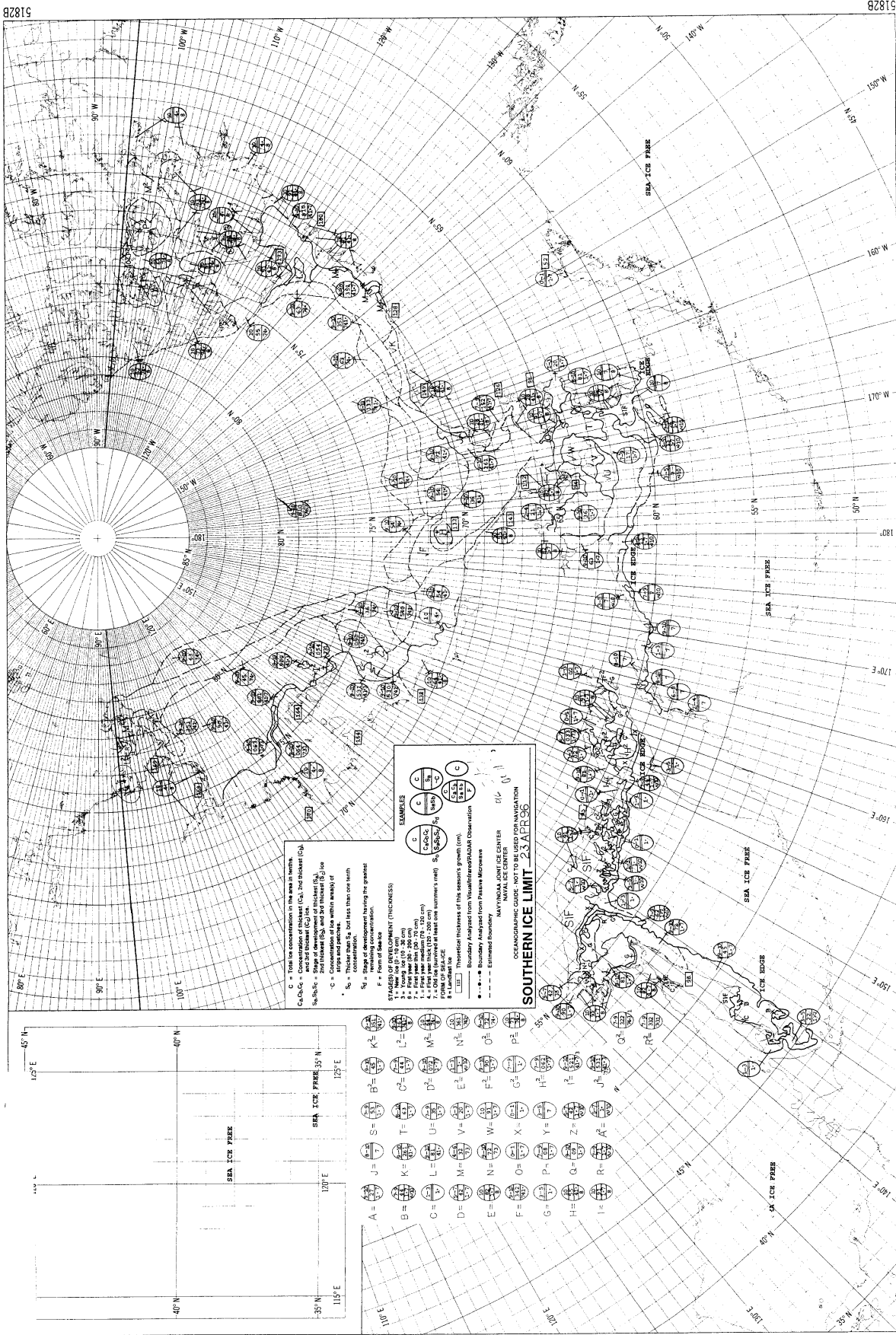
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
C₁C₂C₃C₄ = Concentration of thickest (C₁), 2nd thickest (C₂), 3rd thickest (C₃), and 4th thickest (C₄) ice.
R₁R₂R₃R₄ = Concentration of thickest (R₁), 2nd thickest (R₂), 3rd thickest (R₃), and 4th thickest (R₄) ice.
C = Concentration of ice within areas of average and patches.
S = Stage of development having the greatest remaining concentration.
T = Thickness of ice in feet (THICKNESS).
1 = New ice (0-10 cm)
2 = First year (10-20 cm)
3 = First year (20-30 cm)
4 = First year (30-40 cm)
5 = First year (40-50 cm)
6 = First year (50-60 cm)
7 = Old ice (60 cm or more)

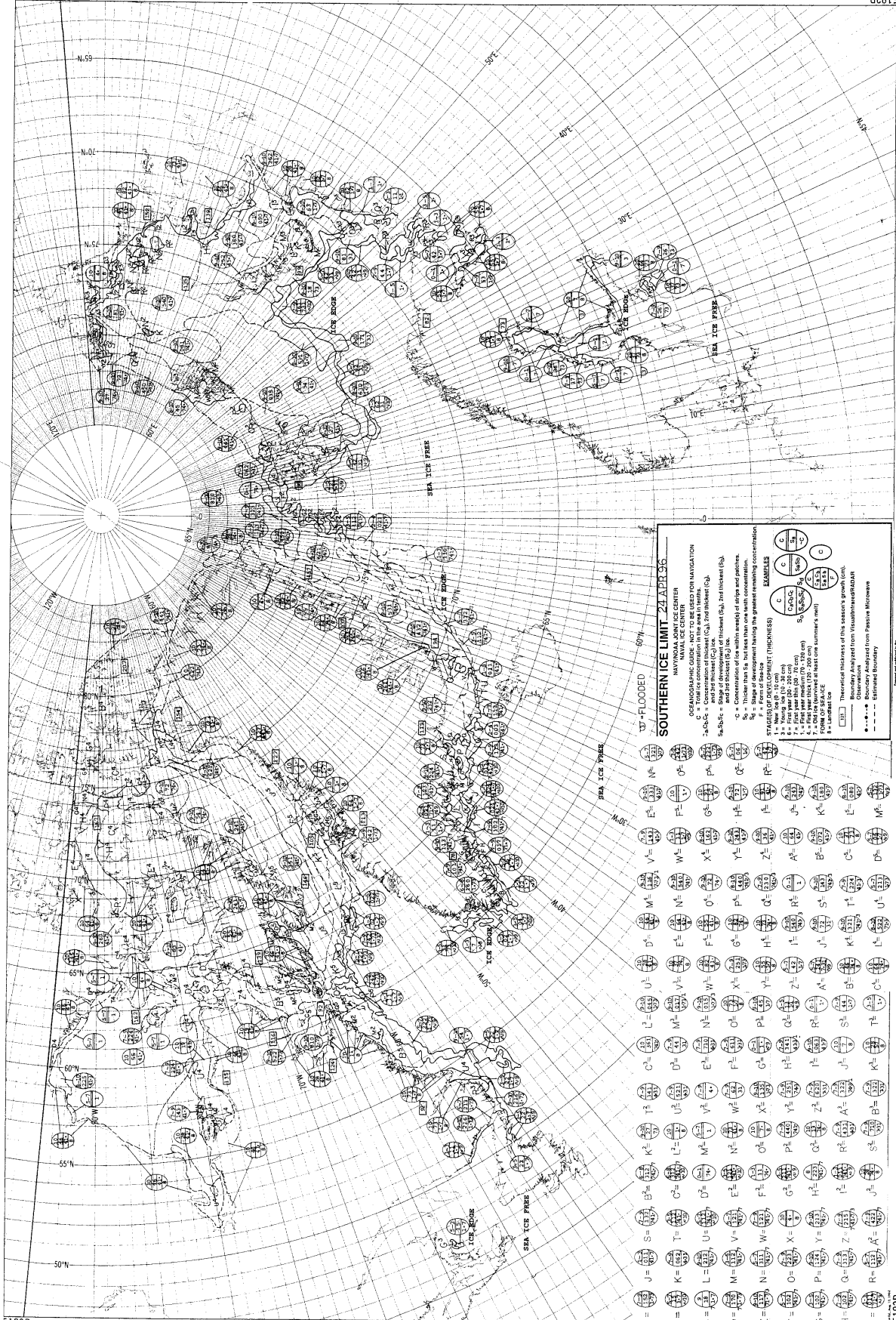
EXAMPLES

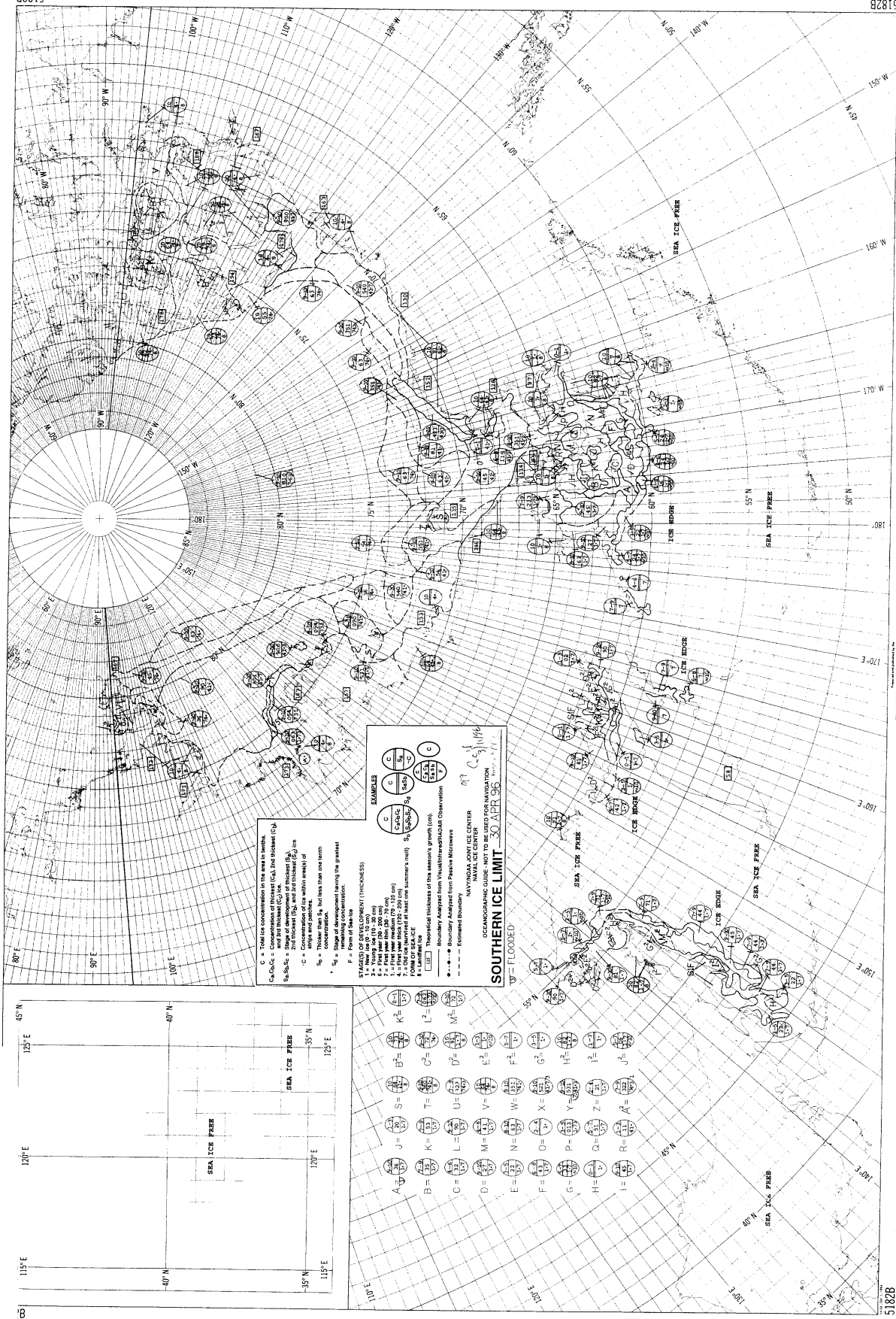
C ₁ C ₂ C ₃ C ₄	R ₁ R ₂ R ₃ R ₄	S	T
1111	1111	1	10
2222	2222	2	20
3333	3333	3	30
4444	4444	4	40
5555	5555	5	50
6666	6666	6	60
7777	7777	7	70

FORM OF SEAS

Boundary analyzed from Visual Observations
Observations
--- Estimated Boundary







EXAMPLES

$\frac{C}{S}$	$\frac{C}{S}$	$\frac{C}{S}$	$\frac{C}{S}$
$\frac{C}{S}$	$\frac{C}{S}$	$\frac{C}{S}$	$\frac{C}{S}$

STANDARD OF DEVELOPMENT (THICKNESS)

1 = Young Sea (10-20 cm)	2 = Young Sea (20-30 cm)	3 = Young Sea (30-40 cm)	4 = Young Sea (40-50 cm)
5 = Young Sea (50-60 cm)	6 = Young Sea (60-70 cm)	7 = Young Sea (70-80 cm)	8 = Young Sea (80-90 cm)
9 = Young Sea (90-100 cm)	10 = Young Sea (100-110 cm)	11 = Young Sea (110-120 cm)	12 = Young Sea (120-130 cm)
13 = Young Sea (130-140 cm)	14 = Young Sea (140-150 cm)	15 = Young Sea (150-160 cm)	16 = Young Sea (160-170 cm)
17 = Young Sea (170-180 cm)	18 = Young Sea (180-190 cm)	19 = Young Sea (190-200 cm)	20 = Young Sea (200-210 cm)
21 = Young Sea (210-220 cm)	22 = Young Sea (220-230 cm)	23 = Young Sea (230-240 cm)	24 = Young Sea (240-250 cm)
25 = Young Sea (250-260 cm)	26 = Young Sea (260-270 cm)	27 = Young Sea (270-280 cm)	28 = Young Sea (280-290 cm)
29 = Young Sea (290-300 cm)	30 = Young Sea (300-310 cm)	31 = Young Sea (310-320 cm)	32 = Young Sea (320-330 cm)
33 = Young Sea (330-340 cm)	34 = Young Sea (340-350 cm)	35 = Young Sea (350-360 cm)	36 = Young Sea (360-370 cm)
37 = Young Sea (370-380 cm)	38 = Young Sea (380-390 cm)	39 = Young Sea (390-400 cm)	40 = Young Sea (400-410 cm)
41 = Young Sea (410-420 cm)	42 = Young Sea (420-430 cm)	43 = Young Sea (430-440 cm)	44 = Young Sea (440-450 cm)
45 = Young Sea (450-460 cm)	46 = Young Sea (460-470 cm)	47 = Young Sea (470-480 cm)	48 = Young Sea (480-490 cm)
49 = Young Sea (490-500 cm)	50 = Young Sea (500-510 cm)	51 = Young Sea (510-520 cm)	52 = Young Sea (520-530 cm)
53 = Young Sea (530-540 cm)	54 = Young Sea (540-550 cm)	55 = Young Sea (550-560 cm)	56 = Young Sea (560-570 cm)
57 = Young Sea (570-580 cm)	58 = Young Sea (580-590 cm)	59 = Young Sea (590-600 cm)	60 = Young Sea (600-610 cm)
61 = Young Sea (610-620 cm)	62 = Young Sea (620-630 cm)	63 = Young Sea (630-640 cm)	64 = Young Sea (640-650 cm)
65 = Young Sea (650-660 cm)	66 = Young Sea (660-670 cm)	67 = Young Sea (670-680 cm)	68 = Young Sea (680-690 cm)
69 = Young Sea (690-700 cm)	70 = Young Sea (700-710 cm)	71 = Young Sea (710-720 cm)	72 = Young Sea (720-730 cm)
73 = Young Sea (730-740 cm)	74 = Young Sea (740-750 cm)	75 = Young Sea (750-760 cm)	76 = Young Sea (760-770 cm)
77 = Young Sea (770-780 cm)	78 = Young Sea (780-790 cm)	79 = Young Sea (790-800 cm)	80 = Young Sea (800-810 cm)
81 = Young Sea (810-820 cm)	82 = Young Sea (820-830 cm)	83 = Young Sea (830-840 cm)	84 = Young Sea (840-850 cm)
85 = Young Sea (850-860 cm)	86 = Young Sea (860-870 cm)	87 = Young Sea (870-880 cm)	88 = Young Sea (880-890 cm)
89 = Young Sea (890-900 cm)	90 = Young Sea (900-910 cm)	91 = Young Sea (910-920 cm)	92 = Young Sea (920-930 cm)
93 = Young Sea (930-940 cm)	94 = Young Sea (940-950 cm)	95 = Young Sea (950-960 cm)	96 = Young Sea (960-970 cm)
97 = Young Sea (970-980 cm)	98 = Young Sea (980-990 cm)	99 = Young Sea (990-1000 cm)	100 = Young Sea (1000-1010 cm)

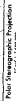
Legend:

- = Ice Center
- = Ice Edge
- = Ice Limit
- = Estimated Boundary

NOTES:

- 1. Ice Center: The center of the ice mass.
- 2. Ice Edge: The edge of the ice mass.
- 3. Ice Limit: The limit of the ice mass.
- 4. Estimated Boundary: The estimated boundary of the ice mass.

5182B



NAVYNOAA JOINT ICE CENTER

NAVAL ICE CENTER

THIS GUIDE - NOT TO BE USED FOR NAVIGATION
concentration in the area in tenths

tion of thickest (C_A), 2nd thickest (C_B),

thickest (C_2) ice.

best (S) Ice.

in of ice within area(s) of strips and patches.

5a but less than one tenth concentration,

CONCLUSIONS: The results of this study suggest that the use of a single, standardized, validated questionnaire is a feasible and reliable method for assessing the prevalence of self-reported mental health problems in a community sample.

MENT (THICKNESS).....EAS/FILES

So (S_aS_bS_c) S_d (C)

least one summer's melt)

5985

thickness of the man's middle finger)

Analyzed from Visual/Infrared/PAPAR

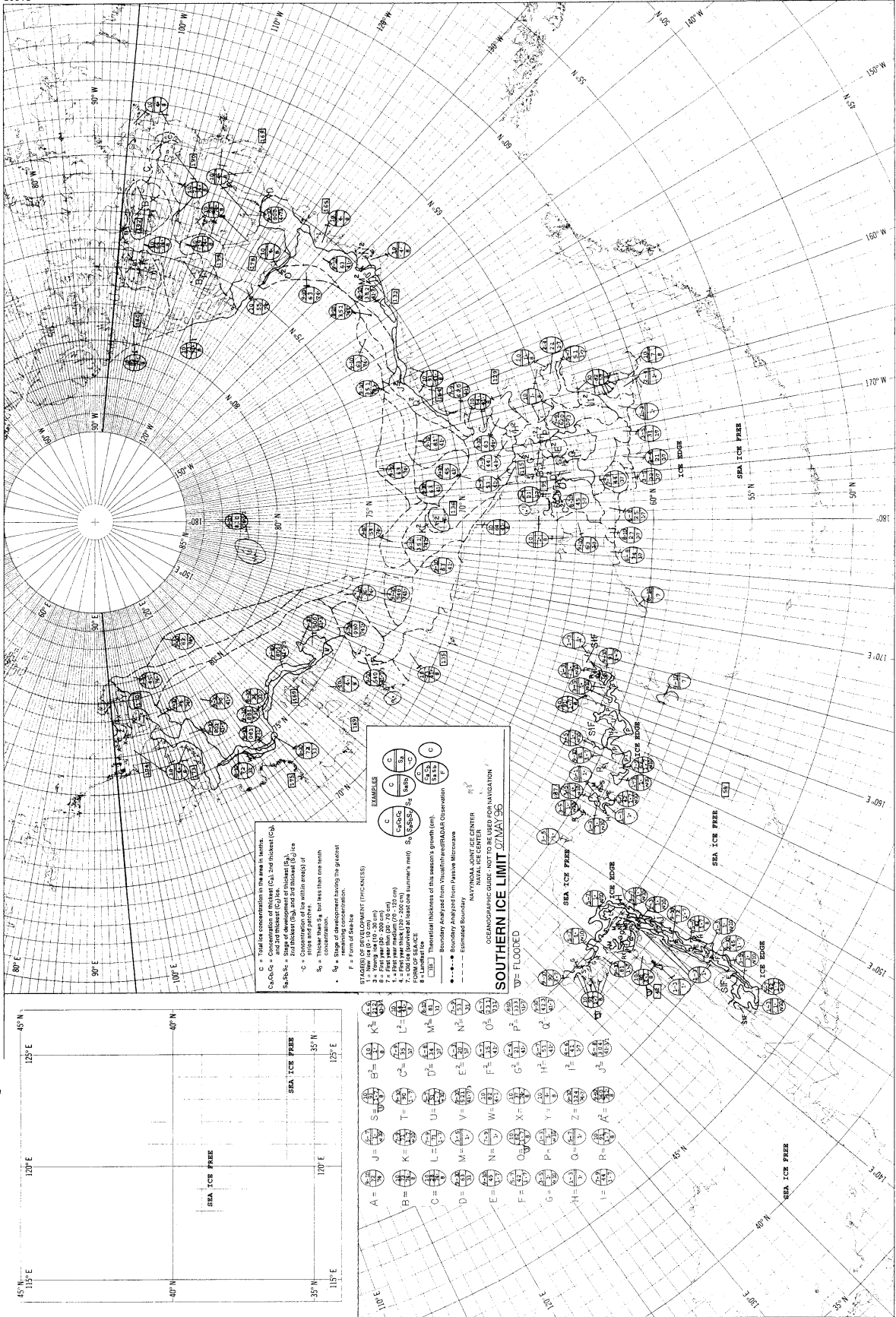
ns

Boundary Analyzed from Passive Microwave

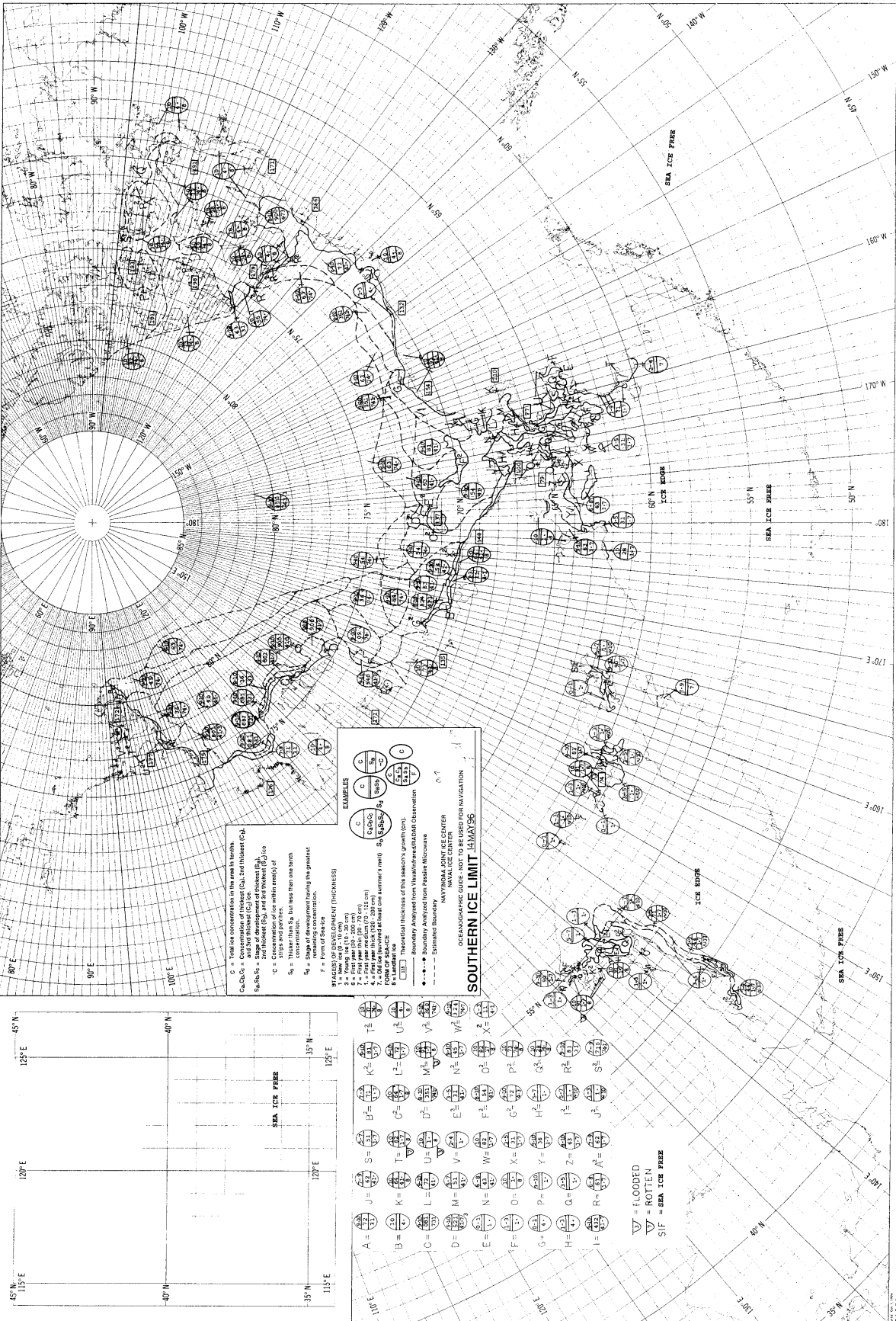
and published by the

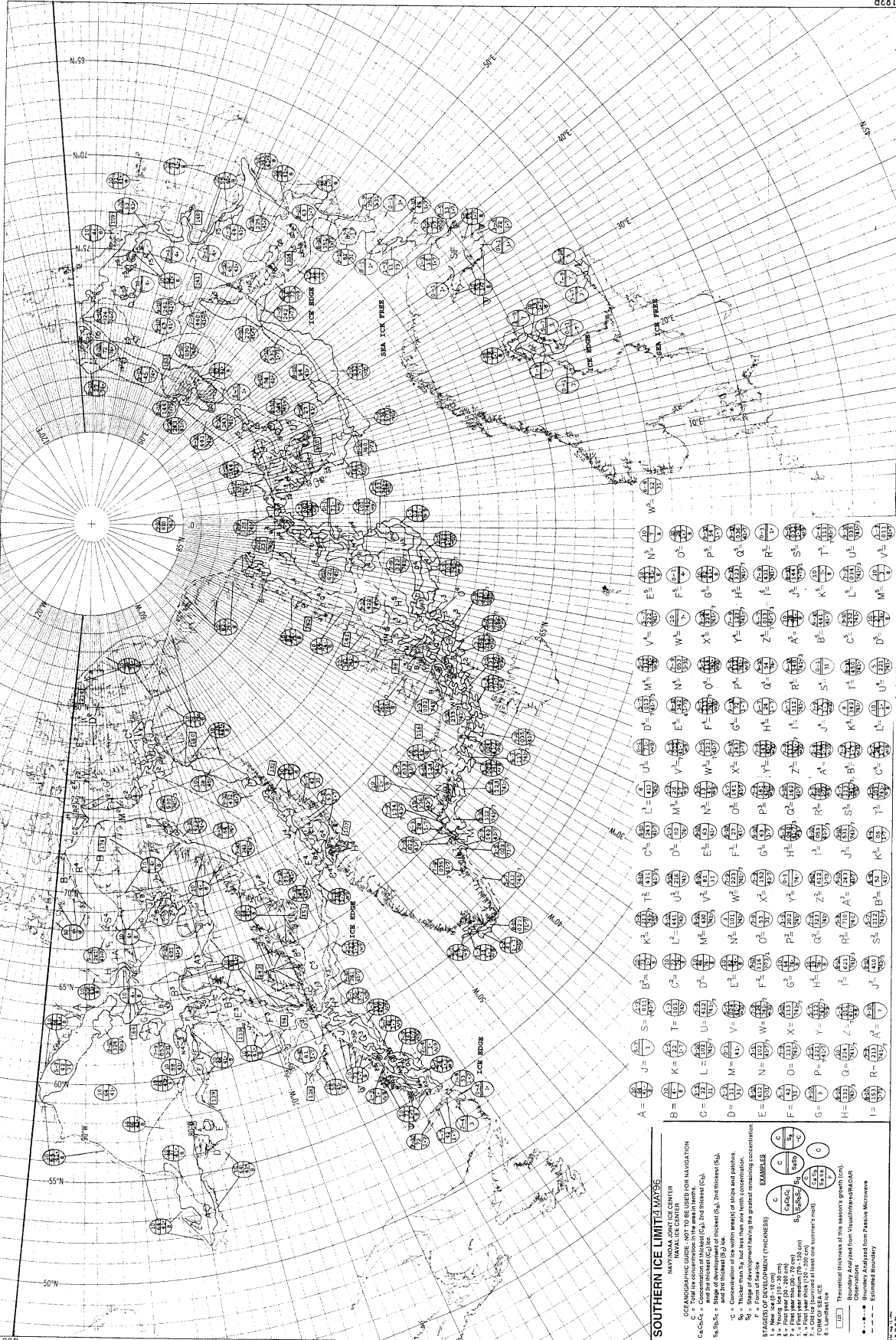
INTERNATIONAL TELEGRAPHIC UNION (ITU)
Geneva, Switzerland

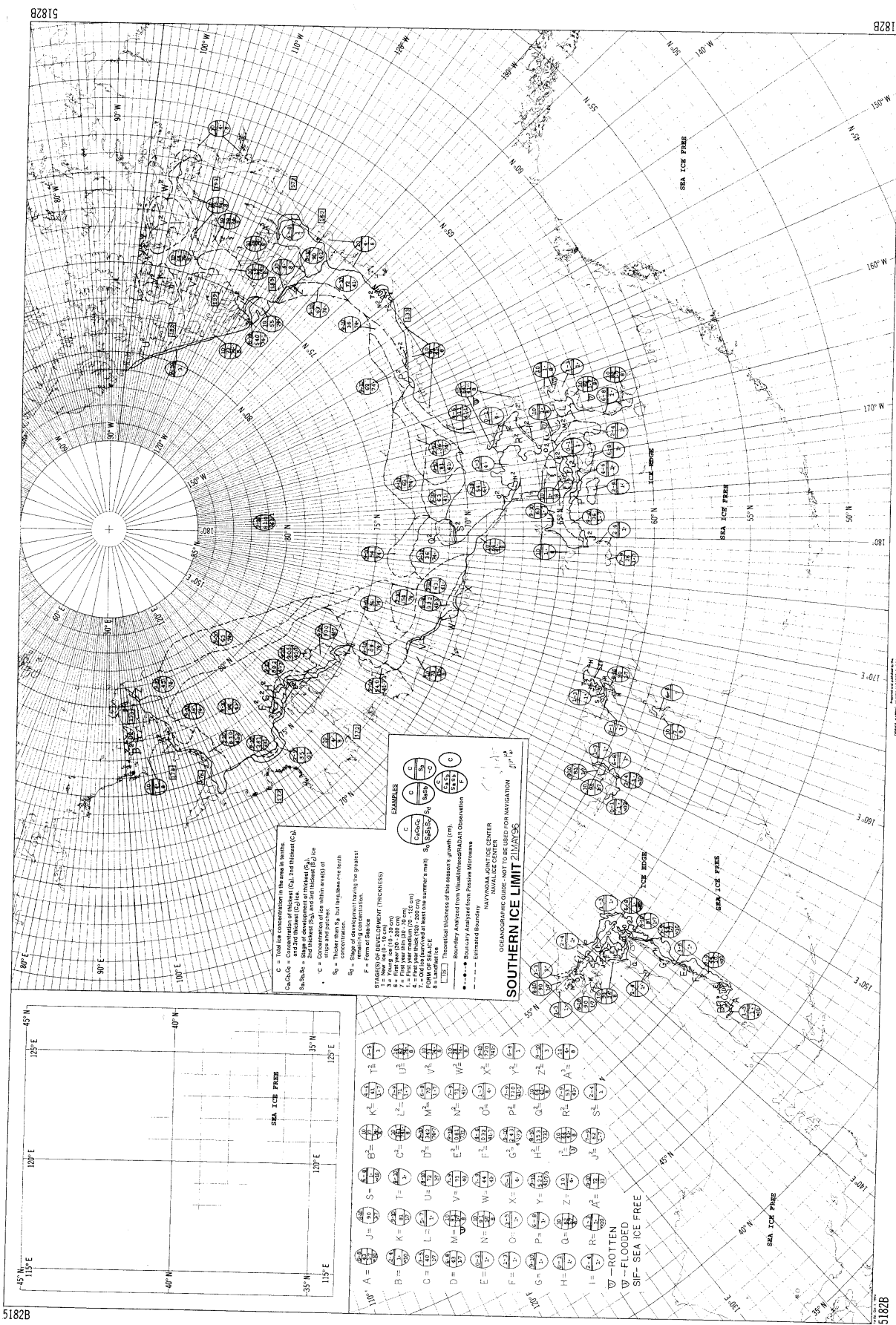
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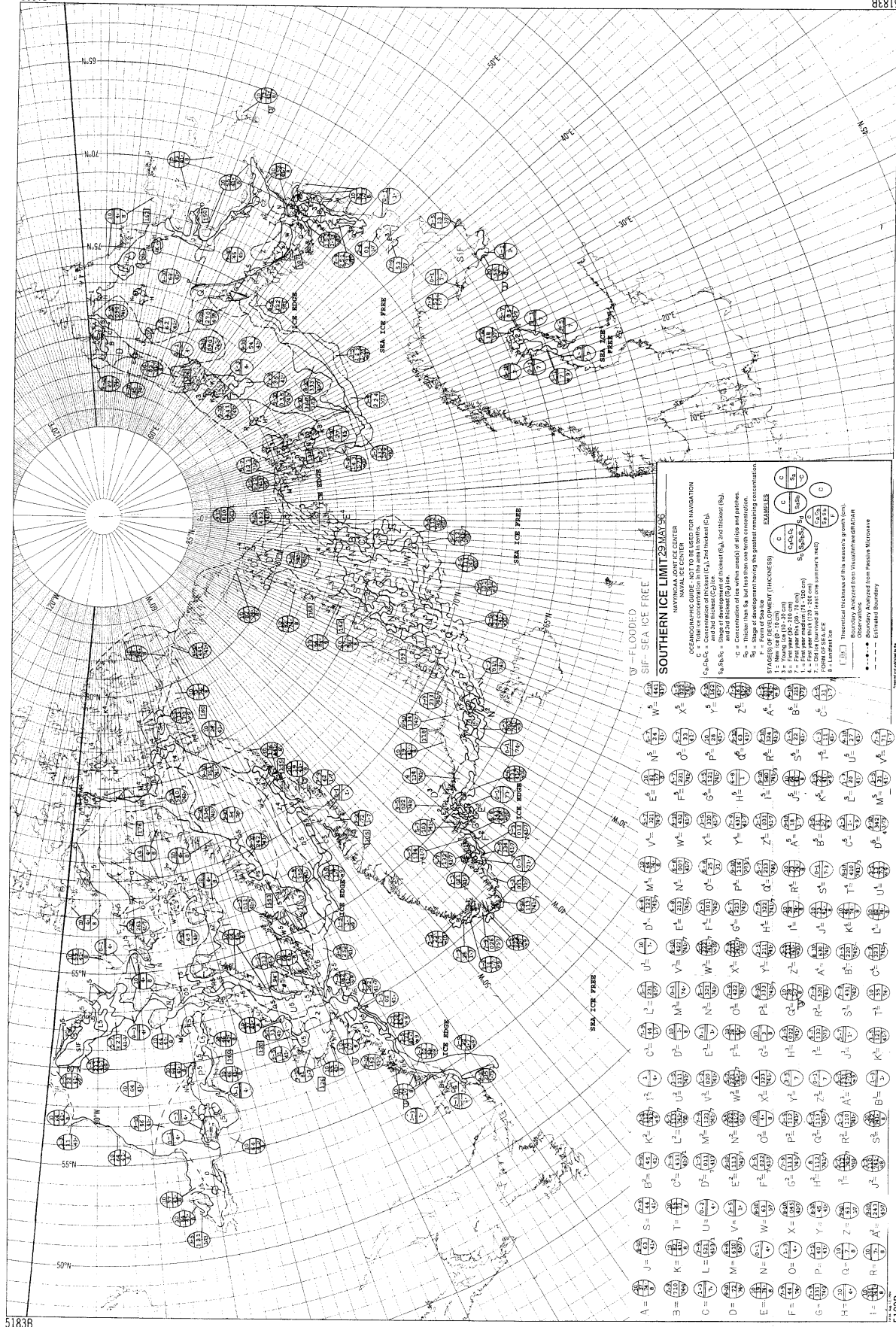


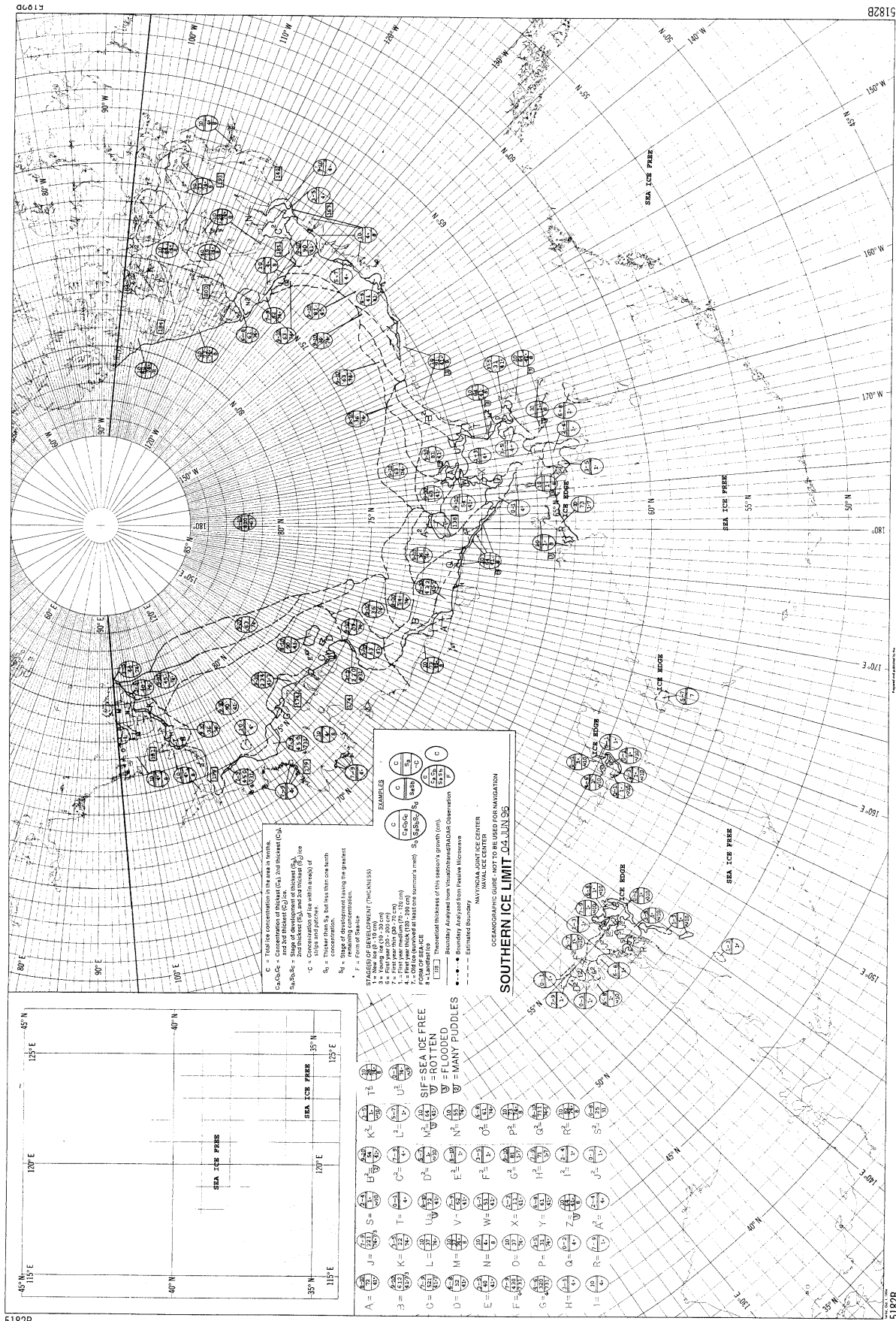






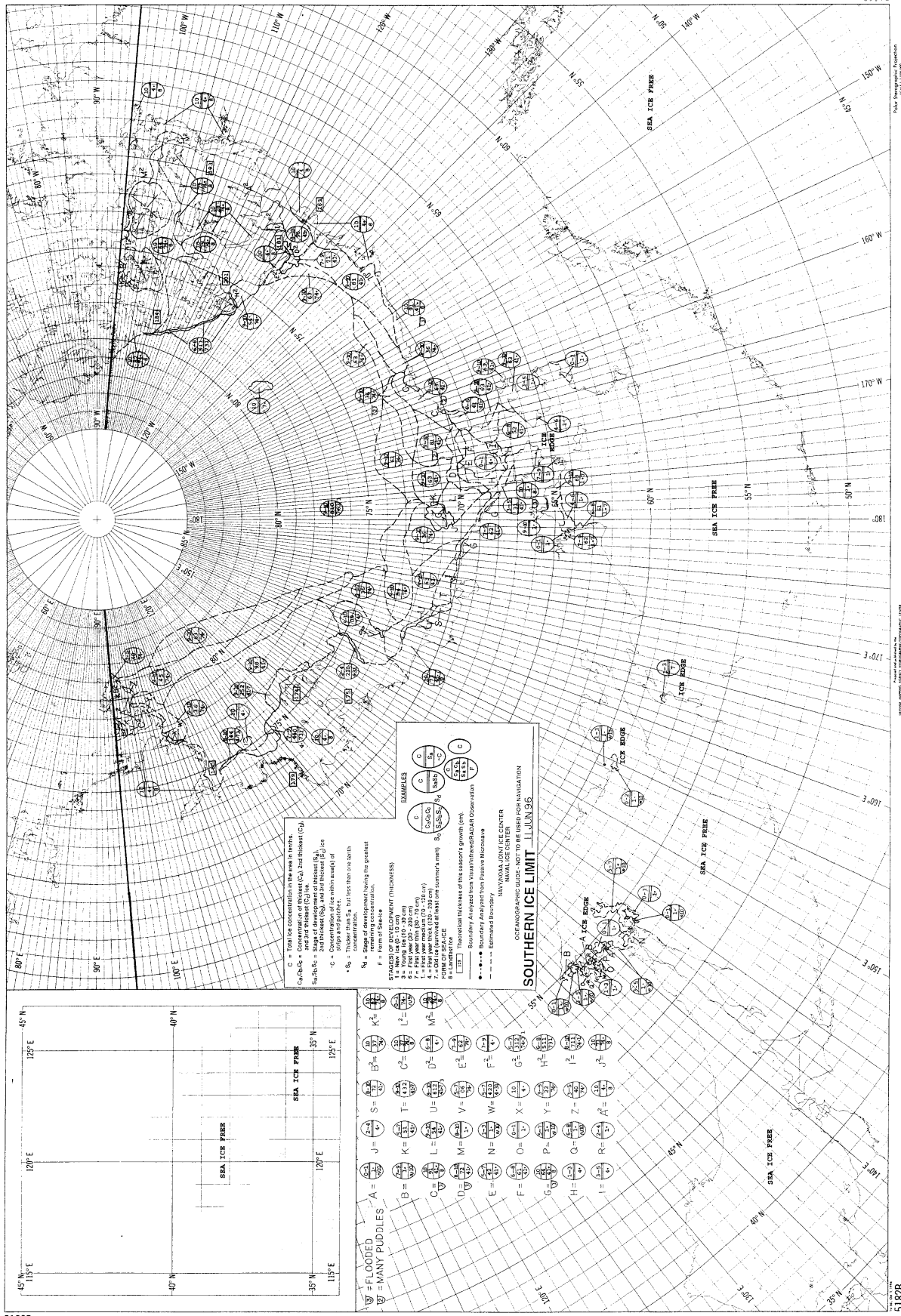




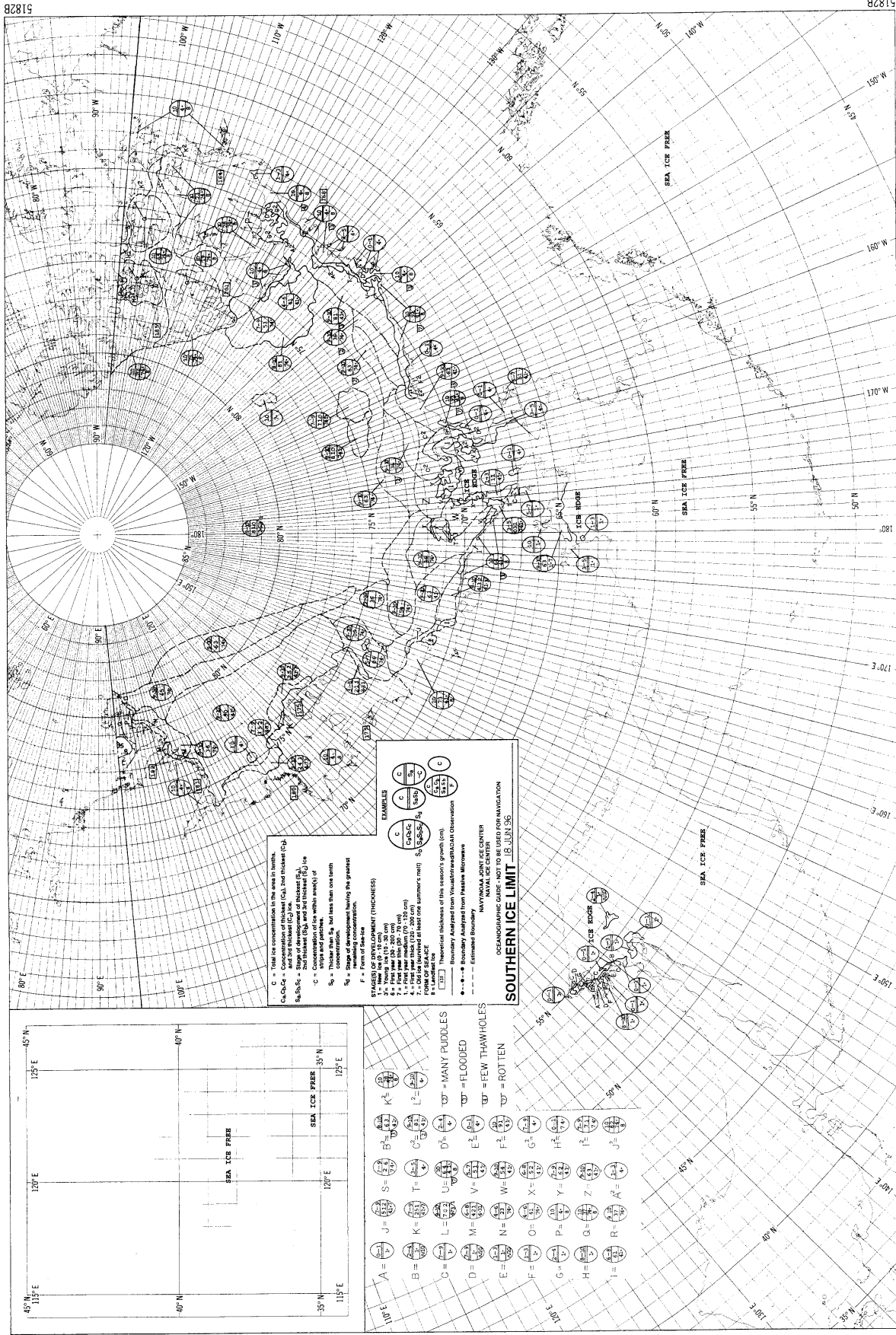


NOAA Nautical Chart 51828, Southern Ocean, 35°N to 55°N, 115°E to 125°E. This chart is a reproduction of the original chart, which was published in 1995. The chart is a product of the National Oceanic and Atmospheric Administration (NOAA). The chart is a nautical chart, which is a map of the sea, showing the coastlines, depths, and other navigational information. The chart is a product of the National Oceanic and Atmospheric Administration (NOAA). The chart is a nautical chart, which is a map of the sea, showing the coastlines, depths, and other navigational information. The chart is a product of the National Oceanic and Atmospheric Administration (NOAA).



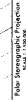


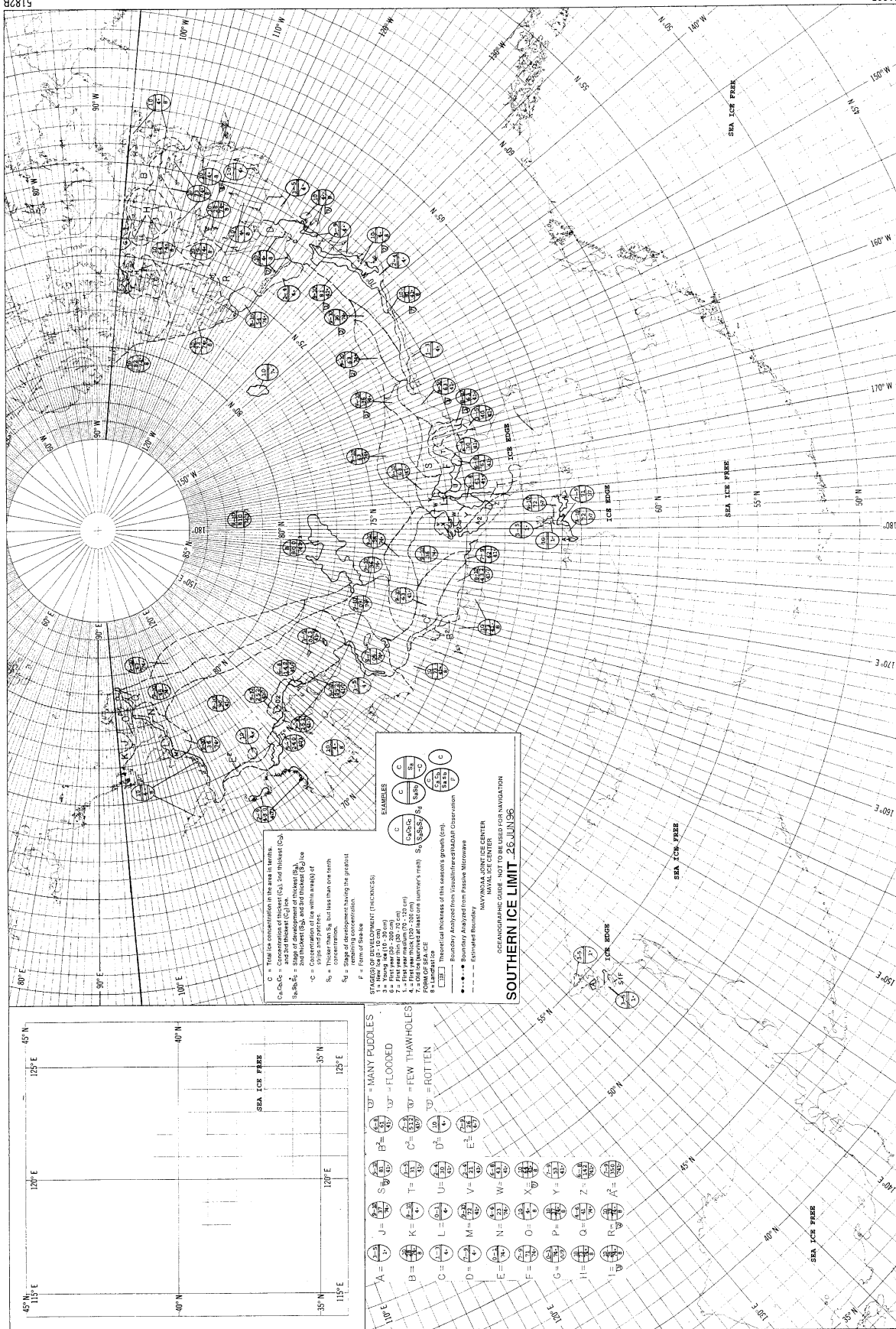




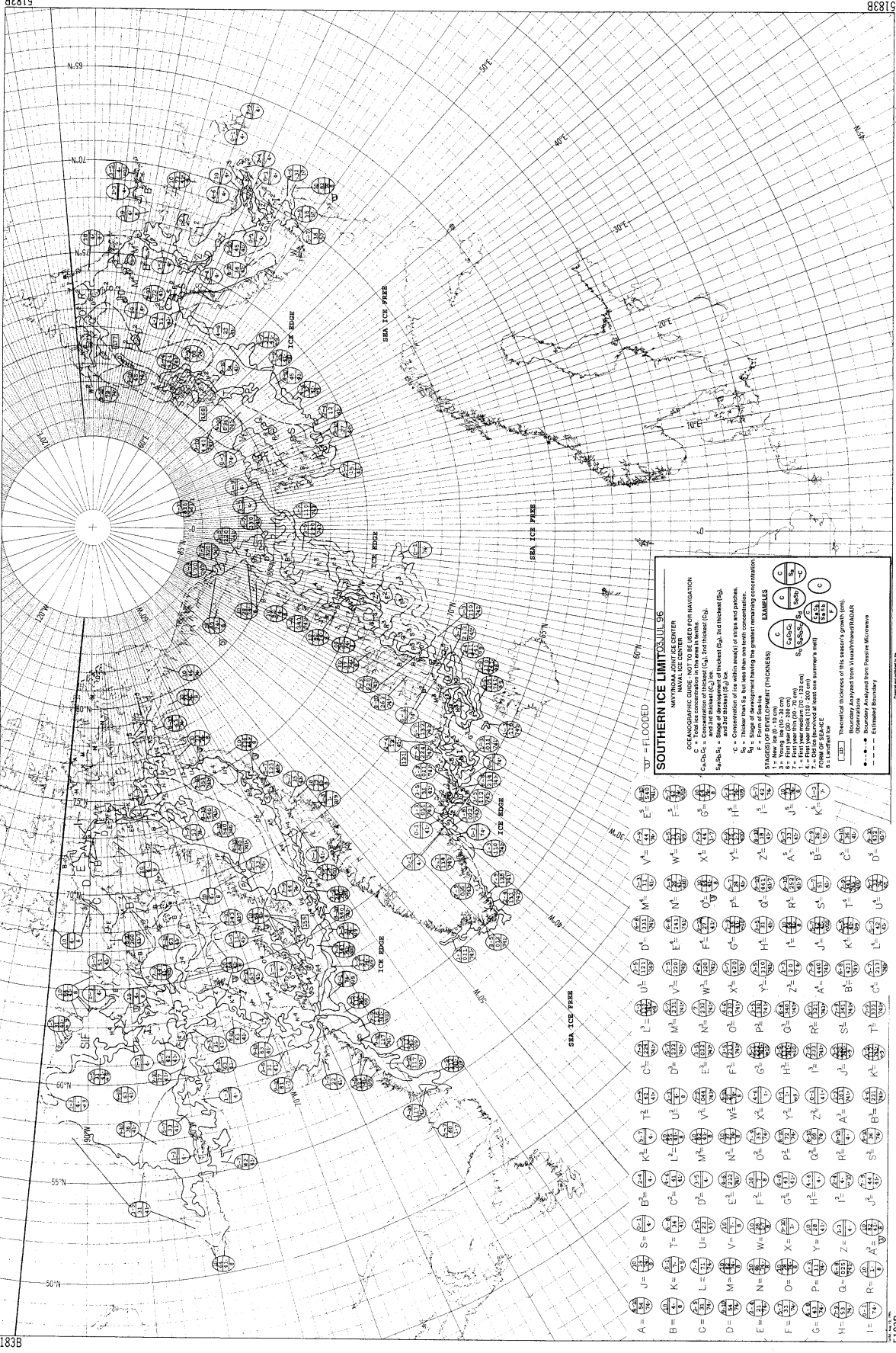
5182B

5182B









SOUTHERN ICE LIMITS JUL 95

NAVY/NOAA JOINT CENTER
COMNAVFORC PAC/NAVFORC PAC

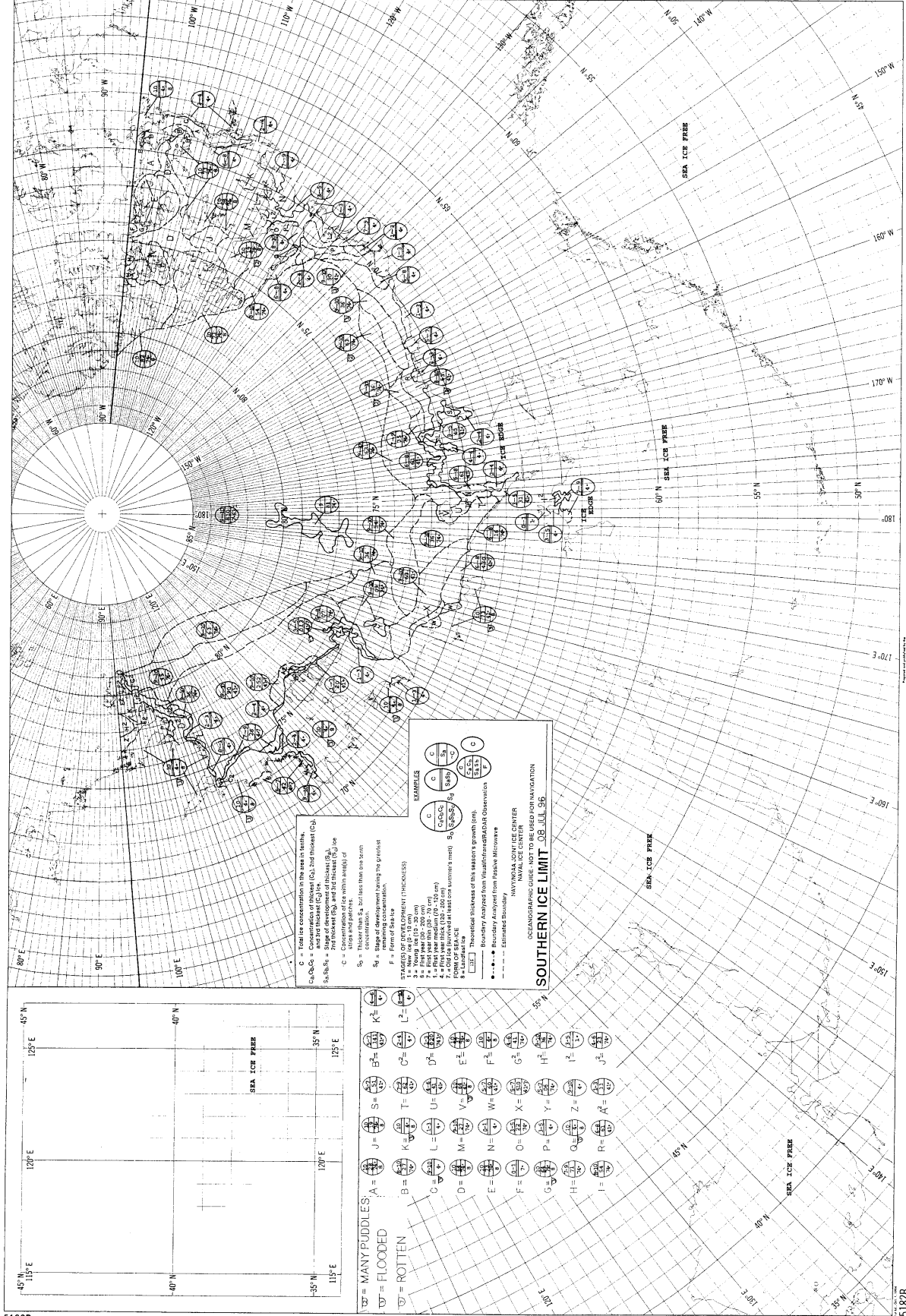
SYMBOLS

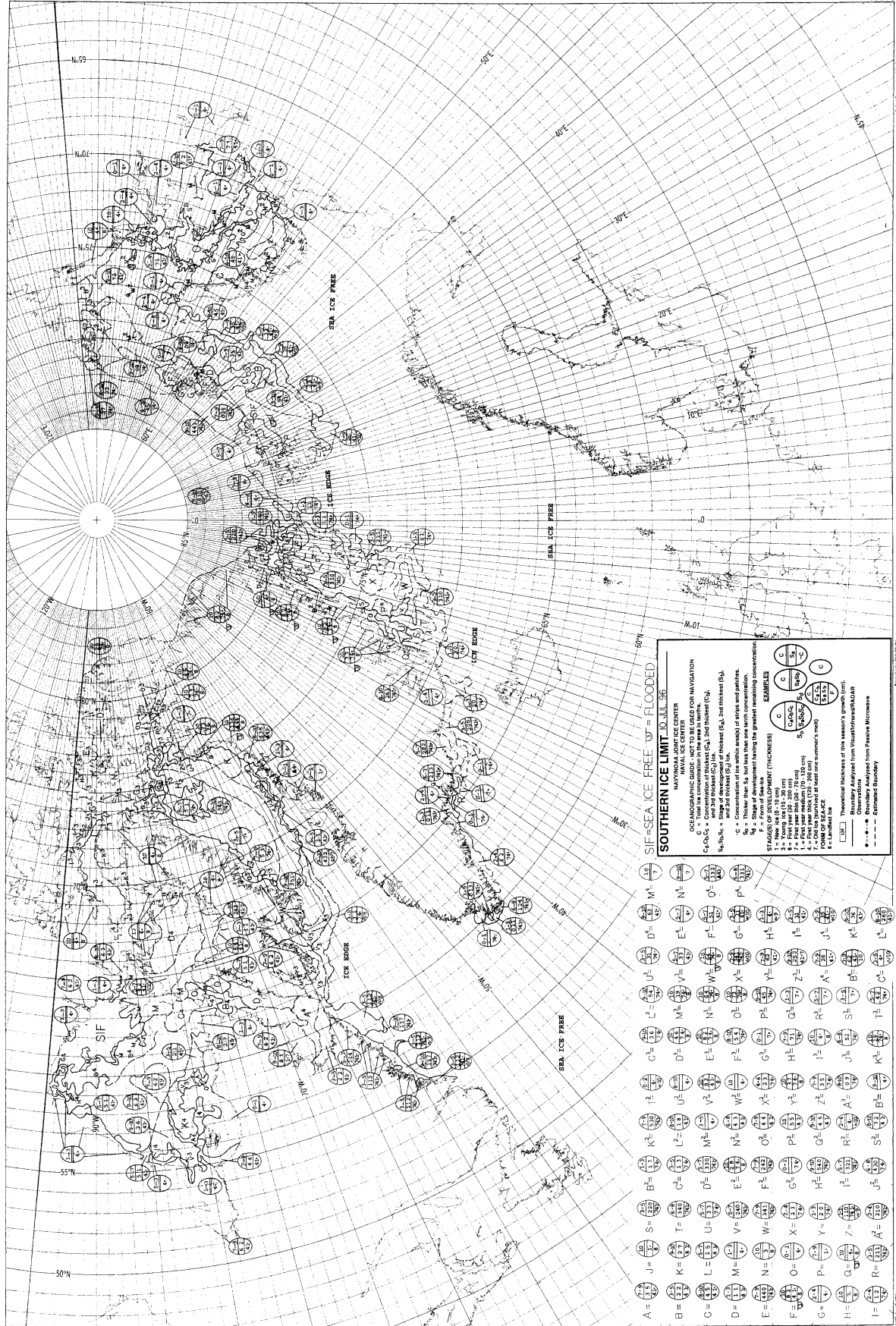
STAGES OF DEVELOPMENT (THICKNESS)

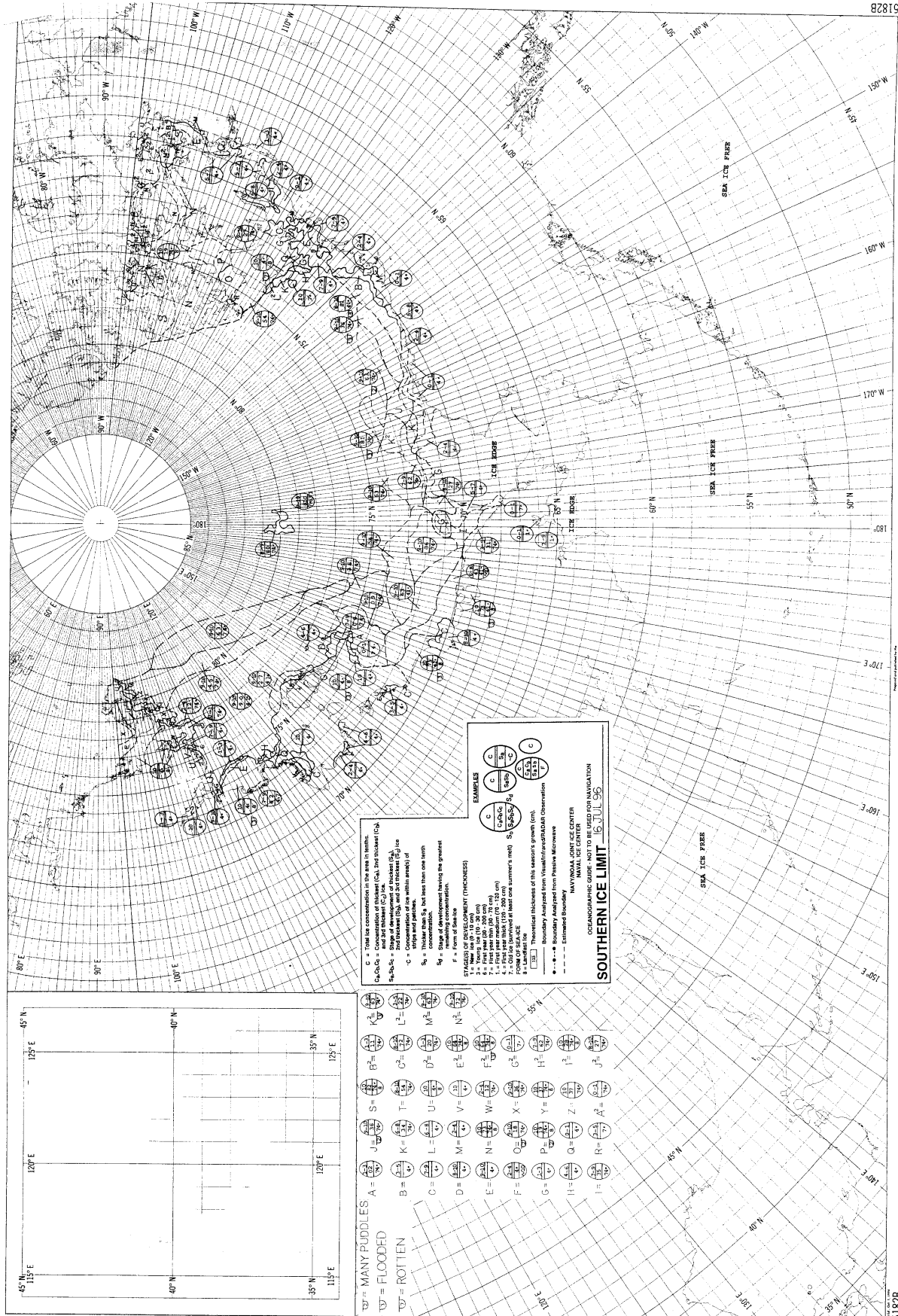
EXAMPLES

LEGEND

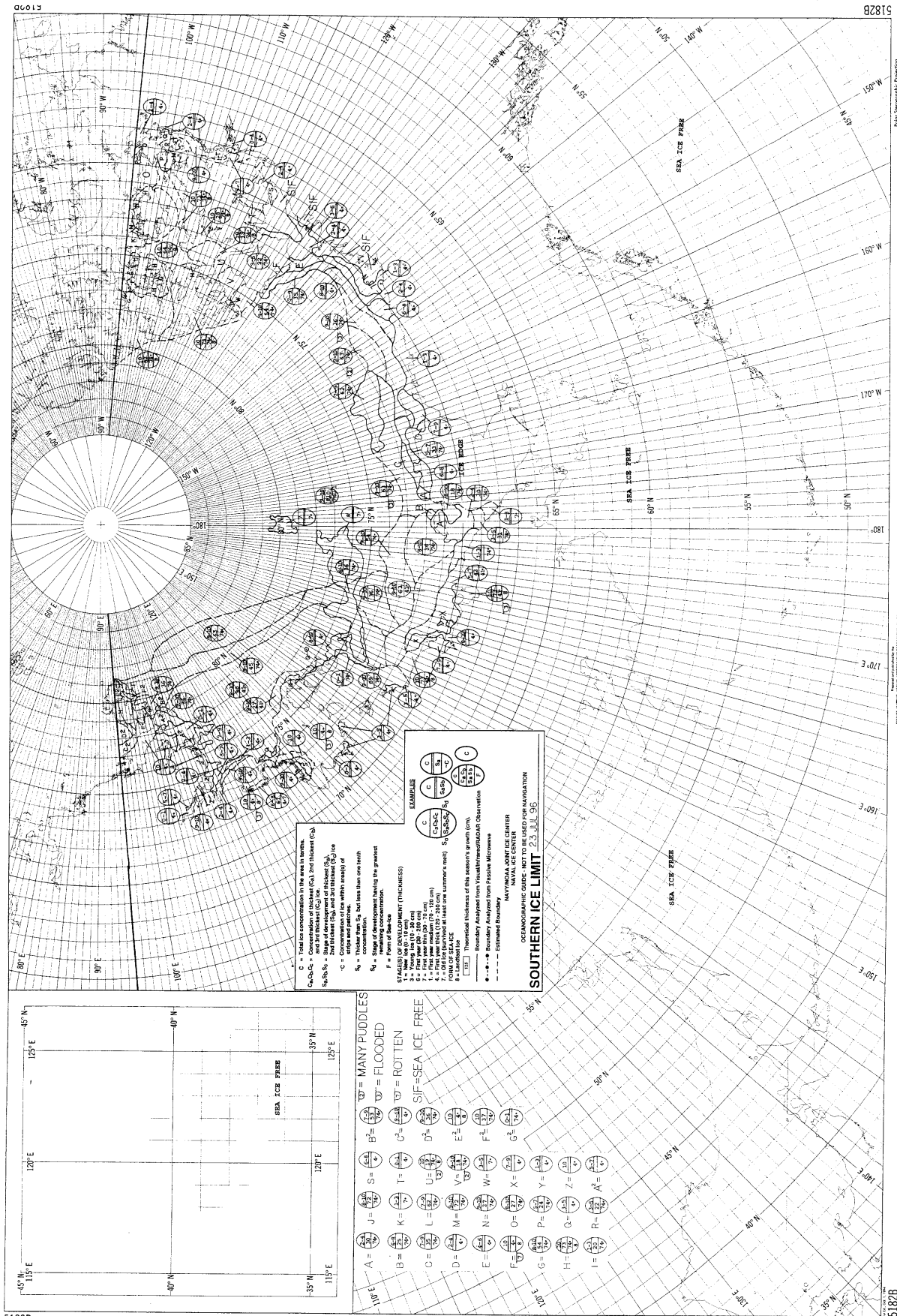
NOTES













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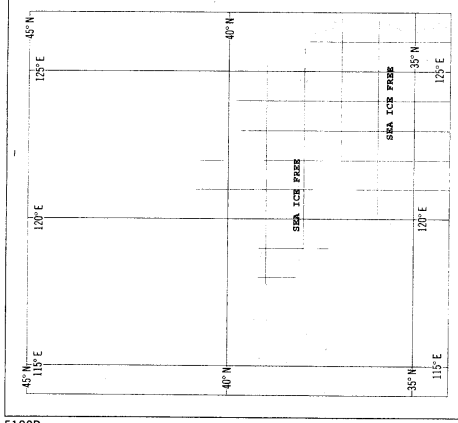
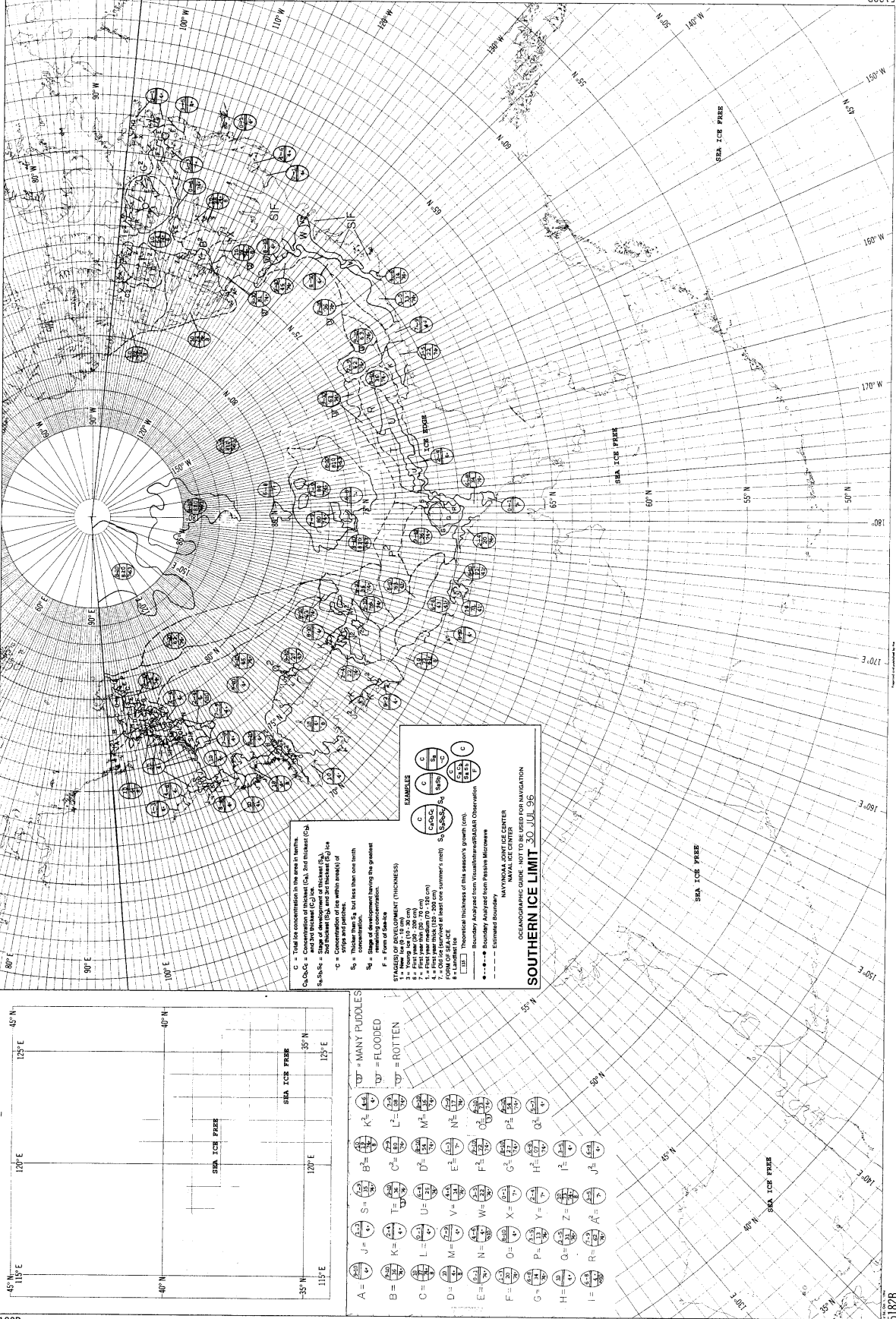
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APPROVED FOR RELEASE

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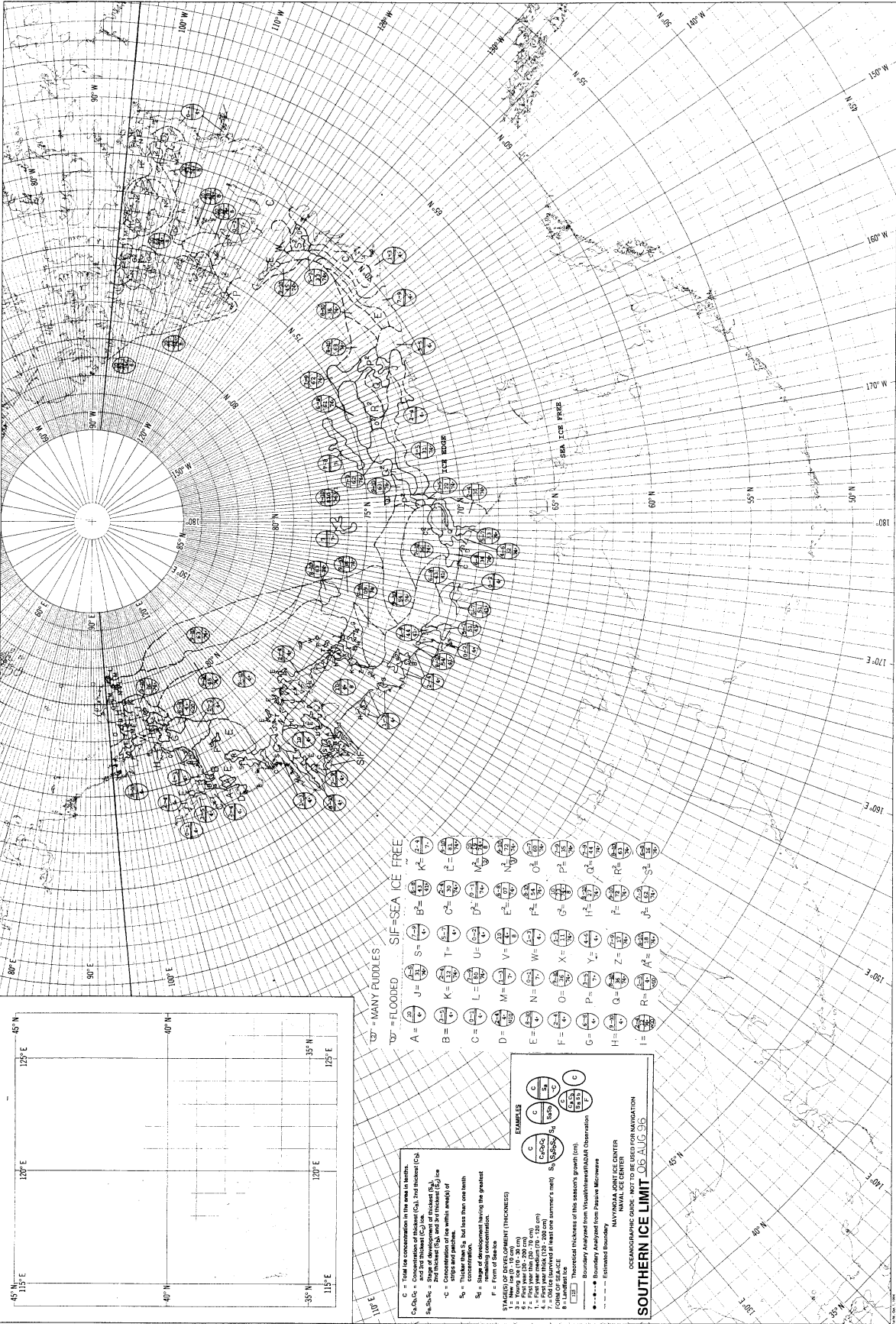
1.8. 1994



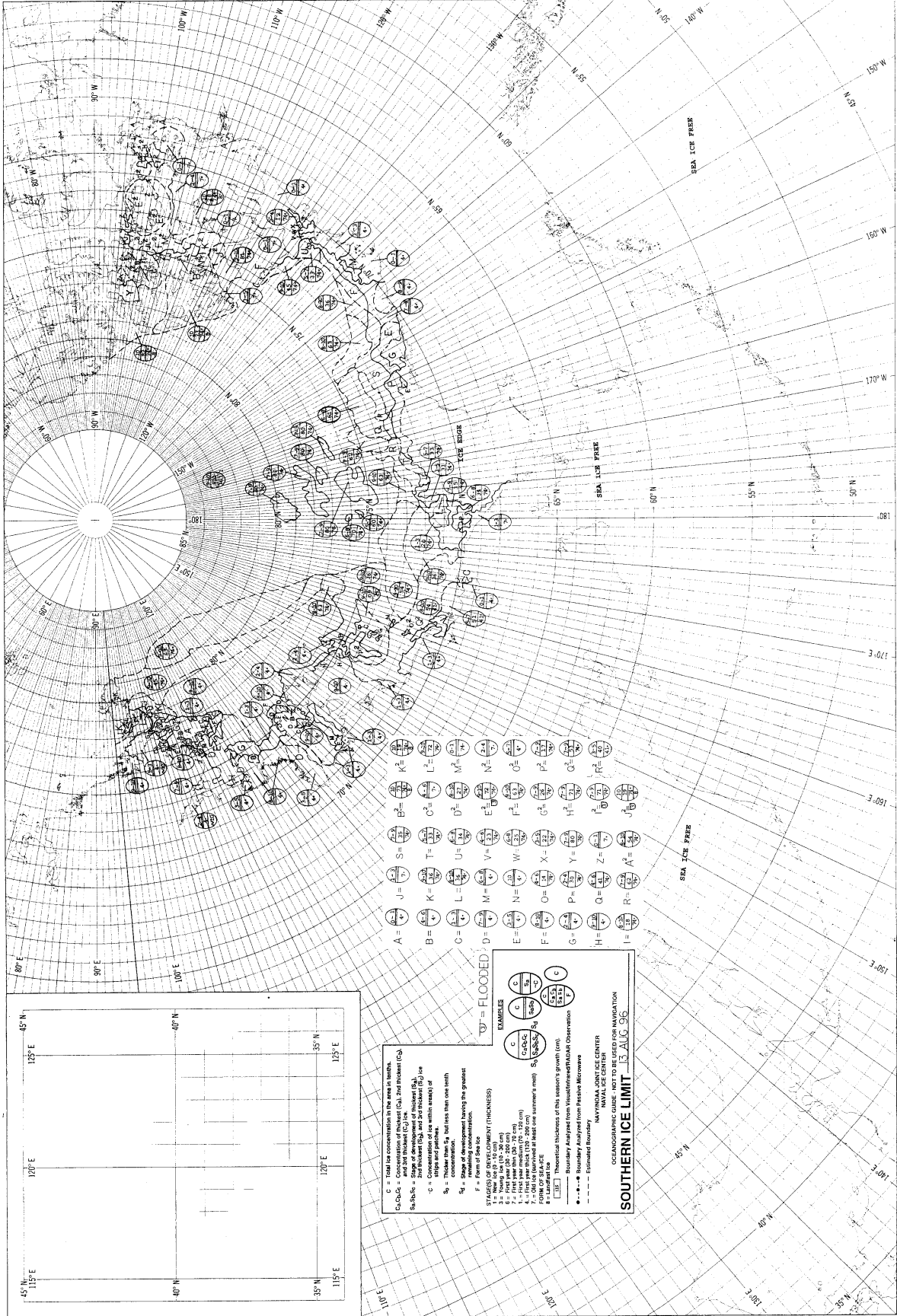
ICE TYPE SYMBOLS

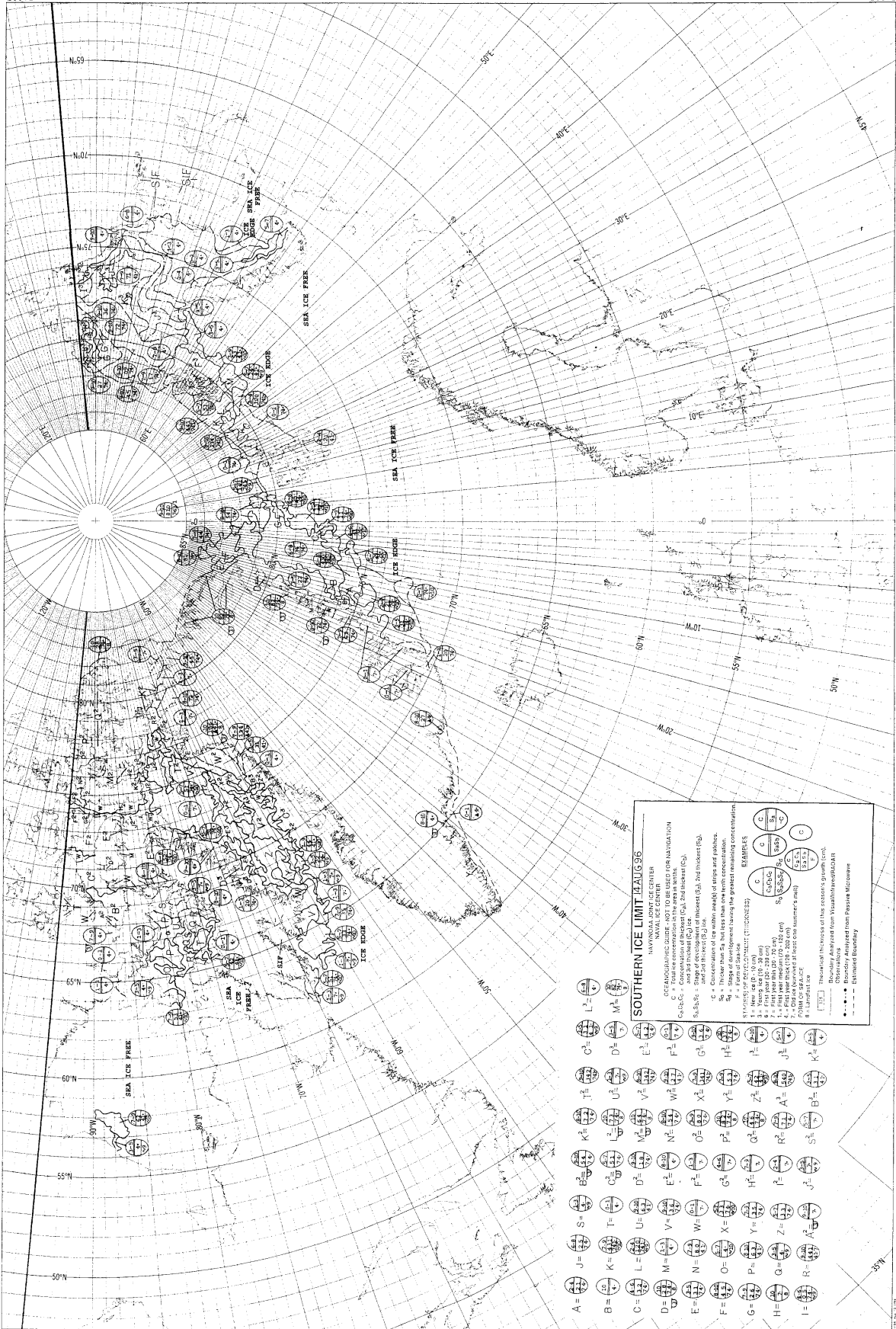
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B = $\frac{1}{2}$	K = $\frac{1}{2}$	S = $\frac{1}{2}$	L = $\frac{1}{2}$	U = $\frac{1}{2}$	V = $\frac{1}{2}$	M = $\frac{1}{2}$	N = $\frac{1}{2}$	F = $\frac{1}{2}$	G = $\frac{1}{2}$	H = $\frac{1}{2}$	I = $\frac{1}{2}$	R = $\frac{1}{2}$	J = $\frac{1}{2}$			
C = $\frac{1}{2}$	L = $\frac{1}{2}$	U = $\frac{1}{2}$	V = $\frac{1}{2}$	M = $\frac{1}{2}$	N = $\frac{1}{2}$	F = $\frac{1}{2}$	G = $\frac{1}{2}$	H = $\frac{1}{2}$	I = $\frac{1}{2}$	R = $\frac{1}{2}$	J = $\frac{1}{2}$					
D = $\frac{1}{2}$	M = $\frac{1}{2}$	N = $\frac{1}{2}$	F = $\frac{1}{2}$	G = $\frac{1}{2}$	H = $\frac{1}{2}$	I = $\frac{1}{2}$	R = $\frac{1}{2}$	J = $\frac{1}{2}$								
E = $\frac{1}{2}$	N = $\frac{1}{2}$	F = $\frac{1}{2}$	G = $\frac{1}{2}$	H = $\frac{1}{2}$	I = $\frac{1}{2}$	R = $\frac{1}{2}$	J = $\frac{1}{2}$									
F = $\frac{1}{2}$	G = $\frac{1}{2}$	H = $\frac{1}{2}$	I = $\frac{1}{2}$	R = $\frac{1}{2}$	J = $\frac{1}{2}$											
G = $\frac{1}{2}$	H = $\frac{1}{2}$	I = $\frac{1}{2}$	R = $\frac{1}{2}$	J = $\frac{1}{2}$												
H = $\frac{1}{2}$	I = $\frac{1}{2}$	R = $\frac{1}{2}$	J = $\frac{1}{2}$													
I = $\frac{1}{2}$	R = $\frac{1}{2}$	J = $\frac{1}{2}$														
R = $\frac{1}{2}$	J = $\frac{1}{2}$															
J = $\frac{1}{2}$																

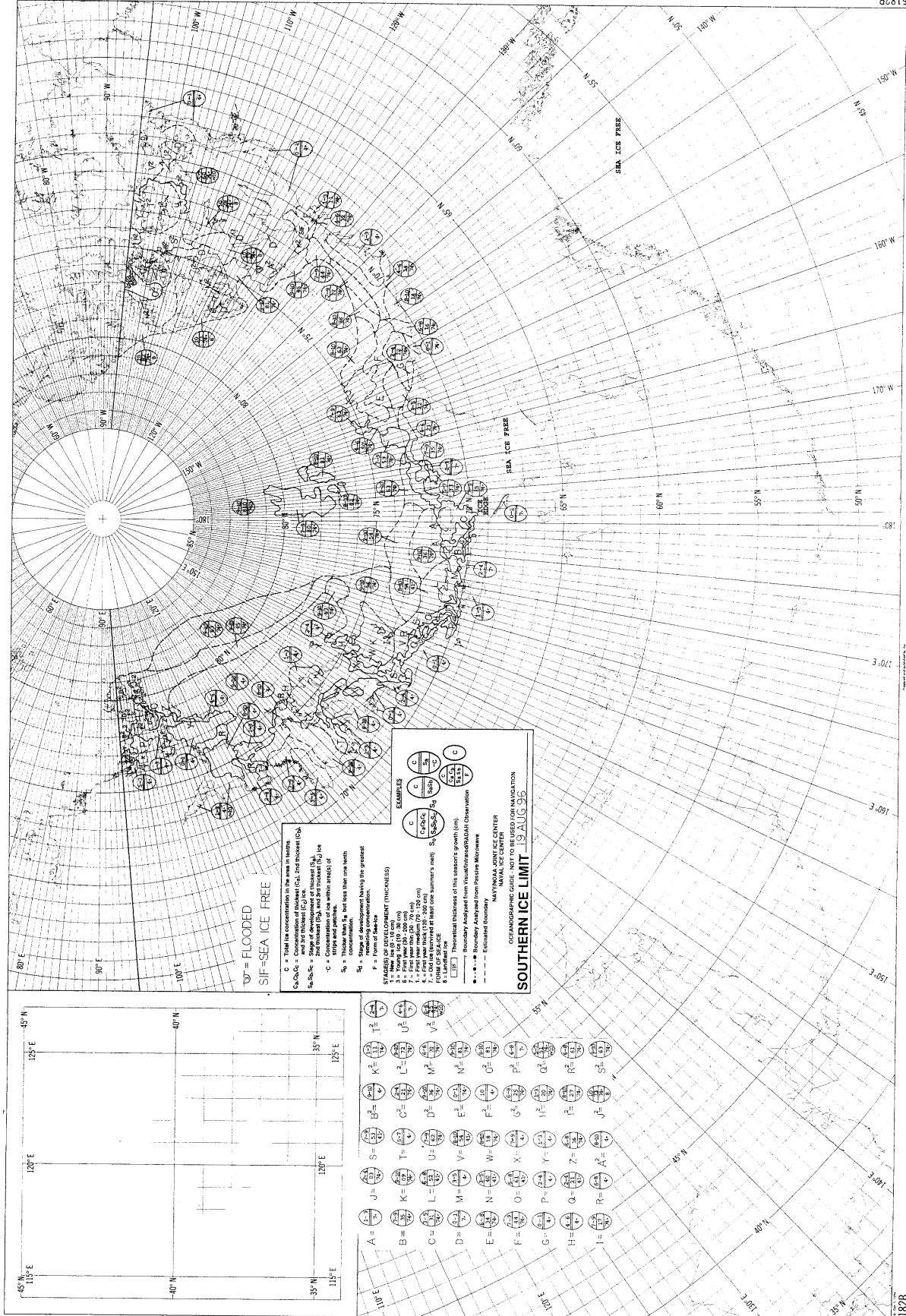


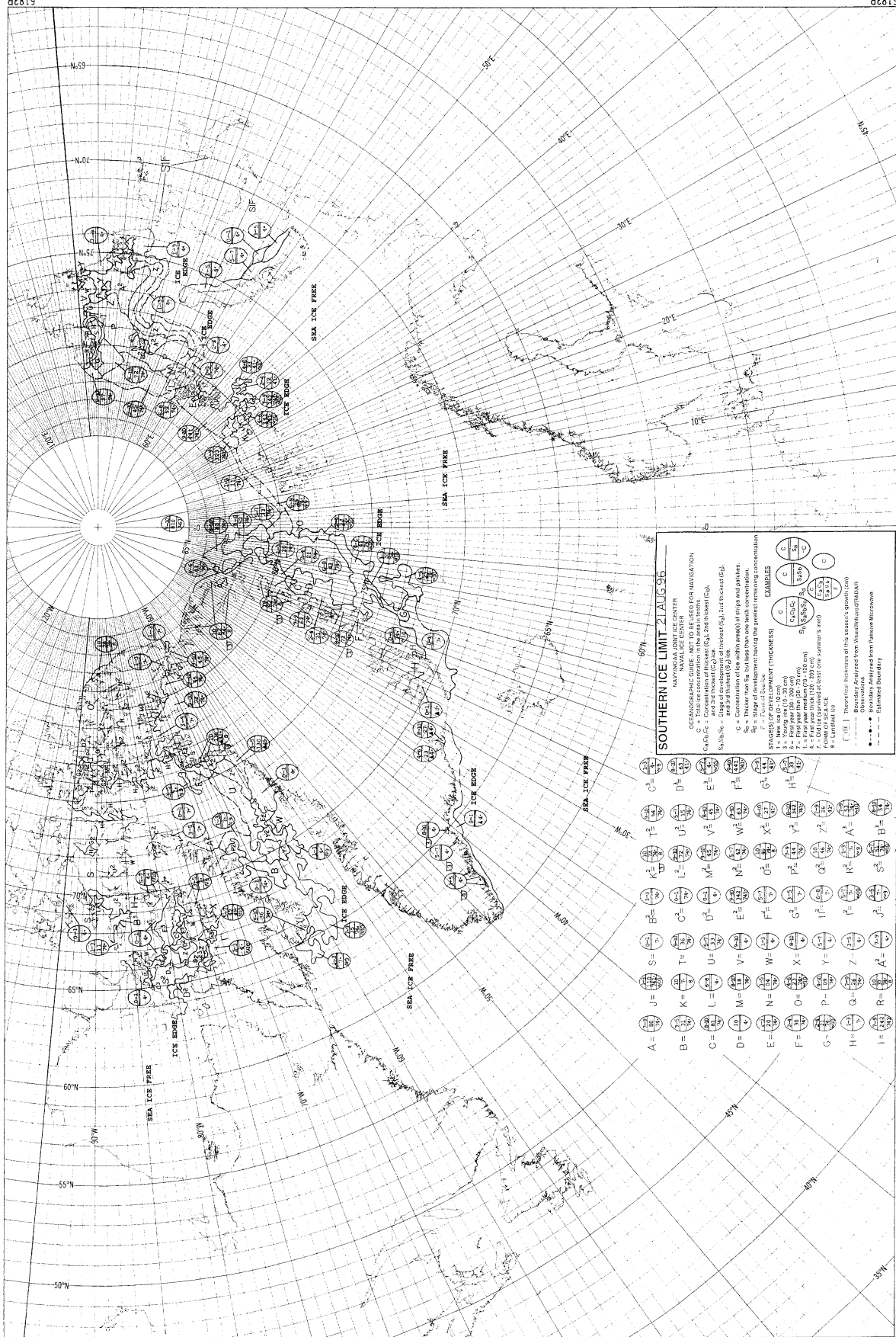




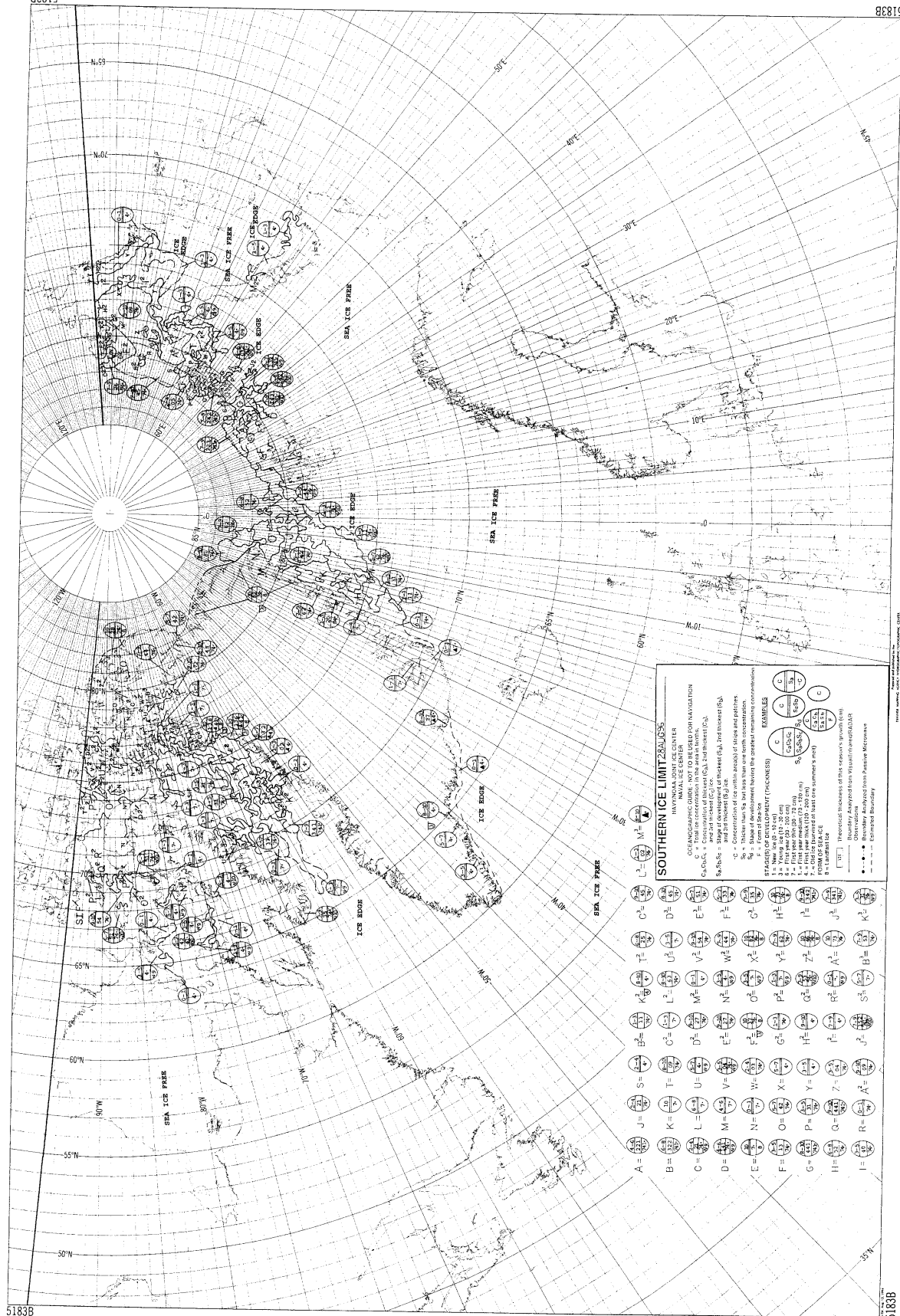




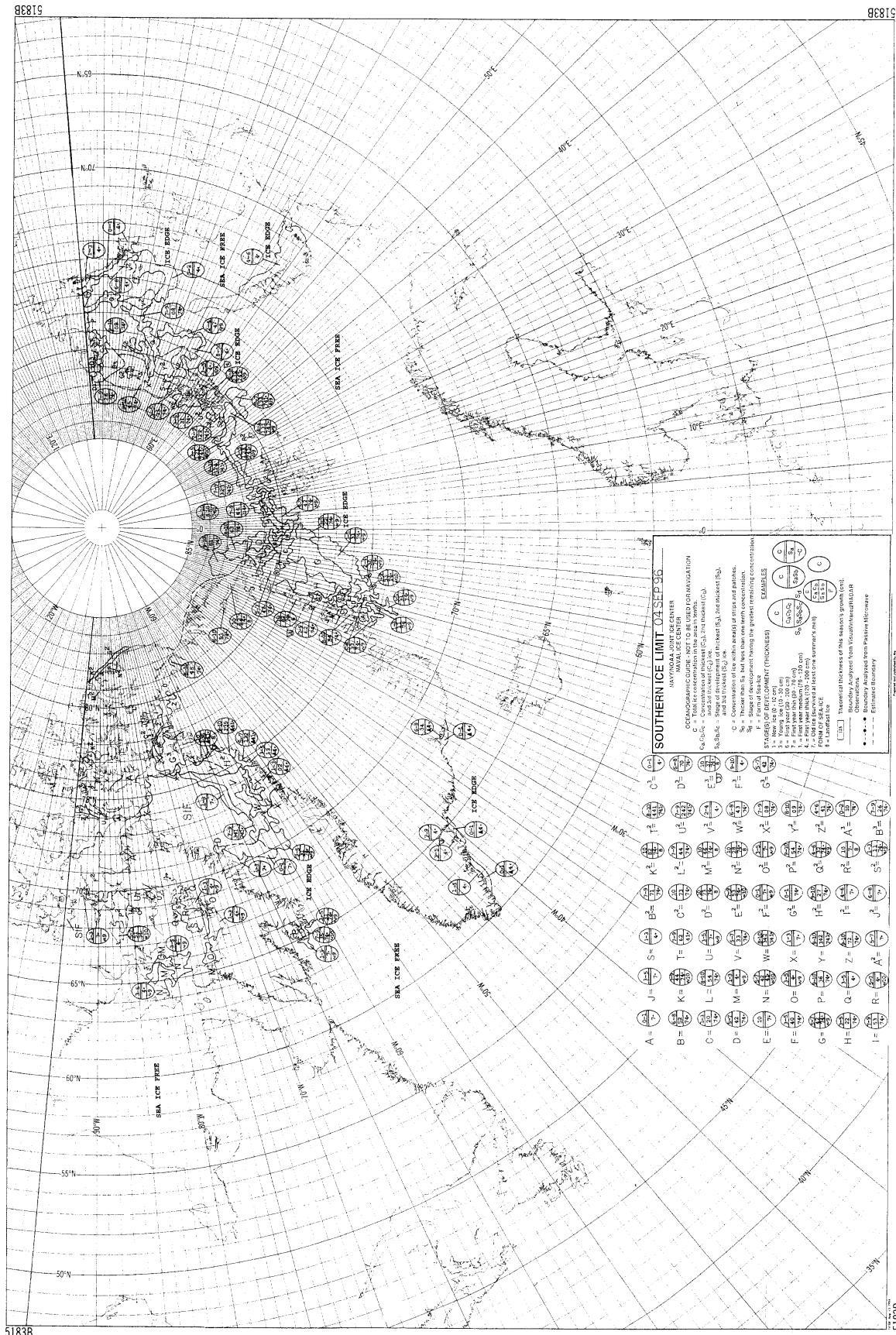




Refer to 1996 Special Arctic
Supplement for this Chart



**Refer to 1996 Special Arctic
Supplement for this Chart**



SOUTHERN ICE LIMIT 04 SEP 95

NAVY JOINT ICE CENTER
NAVAL ICE CENTER

CONCENTRATION OF ICE
C = Total ice concentration in the area (percent)
C₁ = Concentration of ice (percent)
C₂ = Concentration of ice (percent)
C₃ = Concentration of ice (percent)

STAGES OF DEVELOPMENT (THICKNESS)
S₁ = Stage of development (thickness)
S₂ = Stage of development (thickness)
S₃ = Stage of development (thickness)
S₄ = Stage of development (thickness)
S₅ = Stage of development (thickness)
S₆ = Stage of development (thickness)
S₇ = Stage of development (thickness)
S₈ = Stage of development (thickness)
S₉ = Stage of development (thickness)
S₁₀ = Stage of development (thickness)

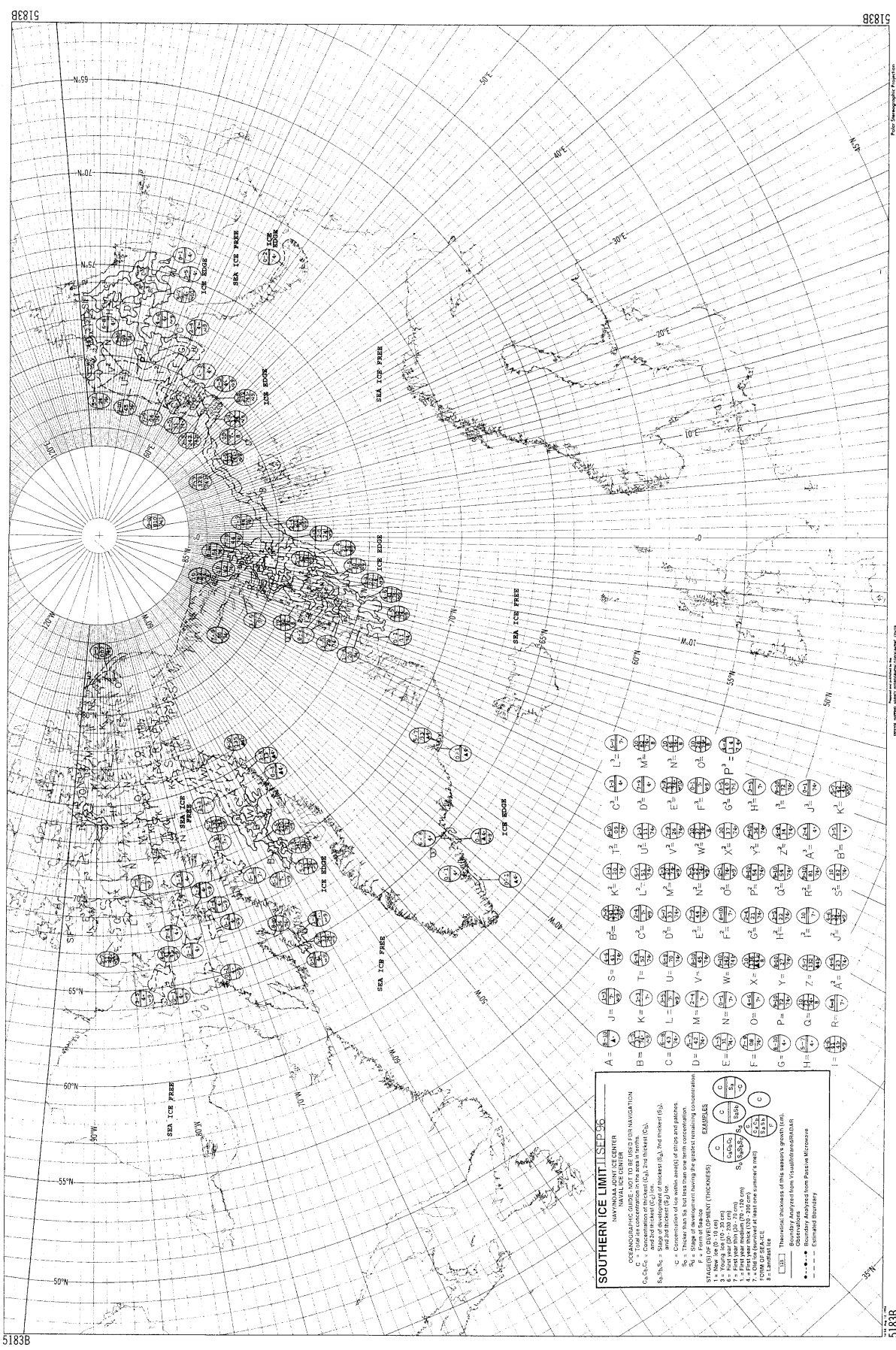
EXAMPLES

1. Young ice (10-15 cm)
2. First year ice (15-20 cm)
3. First year ice (20-25 cm)
4. First year ice (25-30 cm)
5. First year ice (30-35 cm)
6. First year ice (35-40 cm)
7. First year ice (40-45 cm)
8. First year ice (45-50 cm)
9. First year ice (50-55 cm)
10. First year ice (55-60 cm)

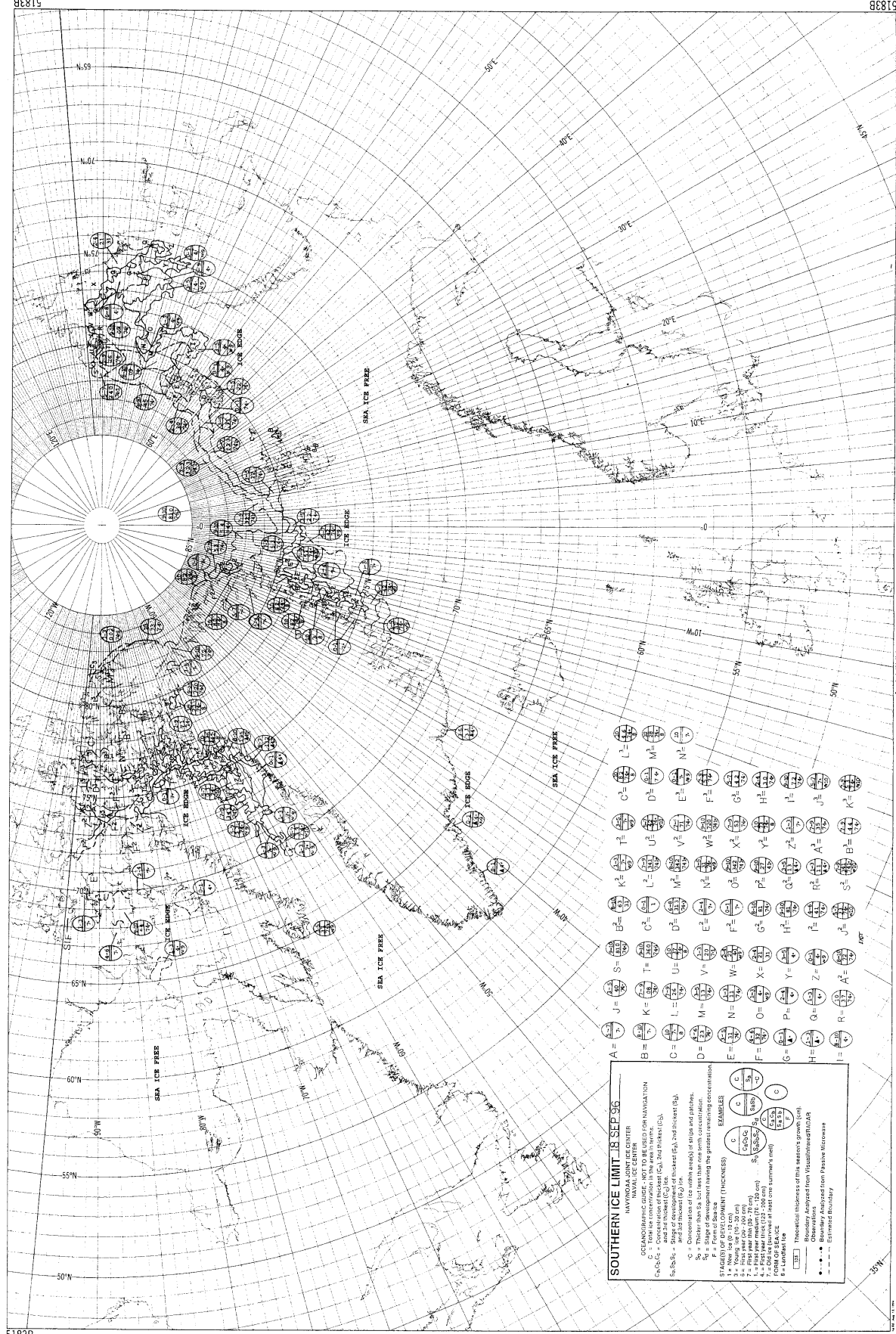
LEGEND

--- Theoretical thickness of the season's growth (cm)
--- Boundary Analyzed from Passive Microwave
--- Boundary Analyzed from Active Microwave
--- Estimated Boundary

**Refer to 1996 Special Arctic
Supplement for this Chart**

[illegible]

**Refer to 1996 Special Arctic
Supplement for this Chart**



SOUTHERN ICE LIMIT 18 SEP 56

NAVY NAVAL ICE CENTER

CONTOURING GUIDE: NOT TO BE USED FOR NAVIGATION

C = Thickness of ice (cm)

C₁C₂C₃ = Concentration of thickest (C₁), 2nd thickest (C₂), and 3rd thickest (C₃)

S₁S₂S₃ = Stage of development of thickest (S₁), 2nd thickest (S₂), and 3rd thickest (S₃)

C₁ = Thickest (cm) but less than the greatest remaining concentration

S₁ = Stage of development having the greatest remaining concentration

STAGES OF DEVELOPMENT (THICKNESS)

1 = New ice (0-15 cm)

2 = Thin ice (15-30 cm)

3 = Thin ice (30-45 cm)

4 = Thin ice (45-60 cm)

5 = Thin ice (60-75 cm)

6 = Thin ice (75-90 cm)

7 = Thin ice (90-105 cm)

8 = Thin ice (105-120 cm)

9 = Thin ice (120-135 cm)

10 = Thin ice (135-150 cm)

11 = Thin ice (150-165 cm)

12 = Thin ice (165-180 cm)

13 = Thin ice (180-195 cm)

14 = Thin ice (195-210 cm)

15 = Thin ice (210-225 cm)

16 = Thin ice (225-240 cm)

17 = Thin ice (240-255 cm)

18 = Thin ice (255-270 cm)

19 = Thin ice (270-285 cm)

20 = Thin ice (285-300 cm)

21 = Thin ice (300-315 cm)

22 = Thin ice (315-330 cm)

23 = Thin ice (330-345 cm)

24 = Thin ice (345-360 cm)

25 = Thin ice (360-375 cm)

26 = Thin ice (375-390 cm)

27 = Thin ice (390-405 cm)

28 = Thin ice (405-420 cm)

29 = Thin ice (420-435 cm)

30 = Thin ice (435-450 cm)

31 = Thin ice (450-465 cm)

32 = Thin ice (465-480 cm)

33 = Thin ice (480-495 cm)

34 = Thin ice (495-510 cm)

35 = Thin ice (510-525 cm)

36 = Thin ice (525-540 cm)

37 = Thin ice (540-555 cm)

38 = Thin ice (555-570 cm)

39 = Thin ice (570-585 cm)

40 = Thin ice (585-600 cm)

41 = Thin ice (600-615 cm)

42 = Thin ice (615-630 cm)

43 = Thin ice (630-645 cm)

44 = Thin ice (645-660 cm)

45 = Thin ice (660-675 cm)

46 = Thin ice (675-690 cm)

47 = Thin ice (690-705 cm)

48 = Thin ice (705-720 cm)

49 = Thin ice (720-735 cm)

50 = Thin ice (735-750 cm)

51 = Thin ice (750-765 cm)

52 = Thin ice (765-780 cm)

53 = Thin ice (780-795 cm)

54 = Thin ice (795-810 cm)

55 = Thin ice (810-825 cm)

56 = Thin ice (825-840 cm)

57 = Thin ice (840-855 cm)

58 = Thin ice (855-870 cm)

59 = Thin ice (870-885 cm)

60 = Thin ice (885-900 cm)

61 = Thin ice (900-915 cm)

62 = Thin ice (915-930 cm)

63 = Thin ice (930-945 cm)

64 = Thin ice (945-960 cm)

65 = Thin ice (960-975 cm)

66 = Thin ice (975-990 cm)

67 = Thin ice (990-1005 cm)

68 = Thin ice (1005-1020 cm)

69 = Thin ice (1020-1035 cm)

70 = Thin ice (1035-1050 cm)

71 = Thin ice (1050-1065 cm)

72 = Thin ice (1065-1080 cm)

73 = Thin ice (1080-1095 cm)

74 = Thin ice (1095-1110 cm)

75 = Thin ice (1110-1125 cm)

76 = Thin ice (1125-1140 cm)

77 = Thin ice (1140-1155 cm)

78 = Thin ice (1155-1170 cm)

79 = Thin ice (1170-1185 cm)

80 = Thin ice (1185-1200 cm)

81 = Thin ice (1200-1215 cm)

82 = Thin ice (1215-1230 cm)

83 = Thin ice (1230-1245 cm)

84 = Thin ice (1245-1260 cm)

85 = Thin ice (1260-1275 cm)

86 = Thin ice (1275-1290 cm)

87 = Thin ice (1290-1305 cm)

88 = Thin ice (1305-1320 cm)

89 = Thin ice (1320-1335 cm)

90 = Thin ice (1335-1350 cm)

91 = Thin ice (1350-1365 cm)

92 = Thin ice (1365-1380 cm)

93 = Thin ice (1380-1395 cm)

94 = Thin ice (1395-1410 cm)

95 = Thin ice (1410-1425 cm)

96 = Thin ice (1425-1440 cm)

97 = Thin ice (1440-1455 cm)

98 = Thin ice (1455-1470 cm)

99 = Thin ice (1470-1485 cm)

100 = Thin ice (1485-1500 cm)

101 = Thin ice (1500-1515 cm)

102 = Thin ice (1515-1530 cm)

103 = Thin ice (1530-1545 cm)

104 = Thin ice (1545-1560 cm)

105 = Thin ice (1560-1575 cm)

106 = Thin ice (1575-1590 cm)

107 = Thin ice (1590-1605 cm)

108 = Thin ice (1605-1620 cm)

109 = Thin ice (1620-1635 cm)

110 = Thin ice (1635-1650 cm)

111 = Thin ice (1650-1665 cm)

112 = Thin ice (1665-1680 cm)

113 = Thin ice (1680-1695 cm)

114 = Thin ice (1695-1710 cm)

115 = Thin ice (1710-1725 cm)

116 = Thin ice (1725-1740 cm)

117 = Thin ice (1740-1755 cm)

118 = Thin ice (1755-1770 cm)

119 = Thin ice (1770-1785 cm)

120 = Thin ice (1785-1800 cm)

121 = Thin ice (1800-1815 cm)

122 = Thin ice (1815-1830 cm)

123 = Thin ice (1830-1845 cm)

124 = Thin ice (1845-1860 cm)

125 = Thin ice (1860-1875 cm)

126 = Thin ice (1875-1890 cm)

127 = Thin ice (1890-1905 cm)

128 = Thin ice (1905-1920 cm)

129 = Thin ice (1920-1935 cm)

130 = Thin ice (1935-1950 cm)

131 = Thin ice (1950-1965 cm)

132 = Thin ice (1965-1980 cm)

133 = Thin ice (1980-1995 cm)

134 = Thin ice (1995-2010 cm)

135 = Thin ice (2010-2025 cm)

136 = Thin ice (2025-2040 cm)

137 = Thin ice (2040-2055 cm)

138 = Thin ice (2055-2070 cm)

139 = Thin ice (2070-2085 cm)

140 = Thin ice (2085-2100 cm)

141 = Thin ice (2100-2115 cm)

142 = Thin ice (2115-2130 cm)

143 = Thin ice (2130-2145 cm)

144 = Thin ice (2145-2160 cm)

145 = Thin ice (2160-2175 cm)

146 = Thin ice (2175-2190 cm)

147 = Thin ice (2190-2205 cm)

148 = Thin ice (2205-2220 cm)

149 = Thin ice (2220-2235 cm)

150 = Thin ice (2235-2250 cm)

151 = Thin ice (2250-2265 cm)

152 = Thin ice (2265-2280 cm)

153 = Thin ice (2280-2295 cm)

154 = Thin ice (2295-2310 cm)

155 = Thin ice (2310-2325 cm)

156 = Thin ice (2325-2340 cm)

157 = Thin ice (2340-2355 cm)

158 = Thin ice (2355-2370 cm)

159 = Thin ice (2370-2385 cm)

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167 = Thin ice (2490-2505 cm)

168 = Thin ice (2505-2520 cm)

169 = Thin ice (2520-2535 cm)

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184 = Thin ice (2745-2760 cm)

185 = Thin ice (2760-2775 cm)

186 = Thin ice (2775-2790 cm)

187 = Thin ice (2790-2805 cm)

188 = Thin ice (2805-2820 cm)

189 = Thin ice (2820-2835 cm)

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192 = Thin ice (2865-2880 cm)

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194 = Thin ice (2895-2910 cm)

195 = Thin ice (2910-2925 cm)

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201 = Thin ice (3000-3015 cm)

202 = Thin ice (3015-3030 cm)

203 = Thin ice (3030-3045 cm)

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208 = Thin ice (3105-3120 cm)

209 = Thin ice (3120-3135 cm)

210 = Thin ice (3135-3150 cm)

211 = Thin ice (3150-3165 cm)

212 = Thin ice (3165-3180 cm)

213 = Thin ice (3180-3195 cm)

214 = Thin ice (3195-3210 cm)

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217 = Thin ice (3240-3255 cm)

218 = Thin ice (3255-3270 cm)

219 = Thin ice (3270-3285 cm)

220 = Thin ice (3285-3300 cm)

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266 = Thin ice (3975-3990 cm)

267 = Thin ice (3990-4005 cm)

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412 = Thin ice (6165-6180 cm)

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414 = Thin ice (6195-6210 cm)

415 = Thin ice (6210-6225 cm)

416 = Thin ice (6225-6240 cm)

417 = Thin ice (6240-6255 cm)

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439 = Thin ice (6570-6585 cm)

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446 = Thin ice (6675-6690 cm)

447 = Thin ice (6690-6705 cm)

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458 = Thin ice (6855-6870 cm)

459 = Thin ice (6870-6885 cm)

460 = Thin ice (6885-6900 cm)

461 = Thin ice (6900-6915 cm)

462 = Thin ice (6915-6930 cm)

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466 = Thin ice (6975-6990 cm)

467 = Thin ice (6990-7005 cm)

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475 = Thin ice (7110-7125 cm)

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497 = Thin ice (7440-7455 cm)

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514 = Thin ice (7695-7710 cm)

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526 = Thin ice (7875-7890 cm)

527 = Thin ice (7890-7905 cm)

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531 = Thin ice (7950-7965 cm)

532 = Thin ice (7965-7980 cm)

533 = Thin ice (7980-7995 cm)

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537 = Thin ice (8040-8055 cm)

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541 = Thin ice (8100-8115 cm)

542 = Thin ice (8115-8130 cm)

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549 = Thin ice (8220-8235 cm)

550 = Thin ice (8235-8250 cm)

551 = Thin ice (8250-8265 cm)

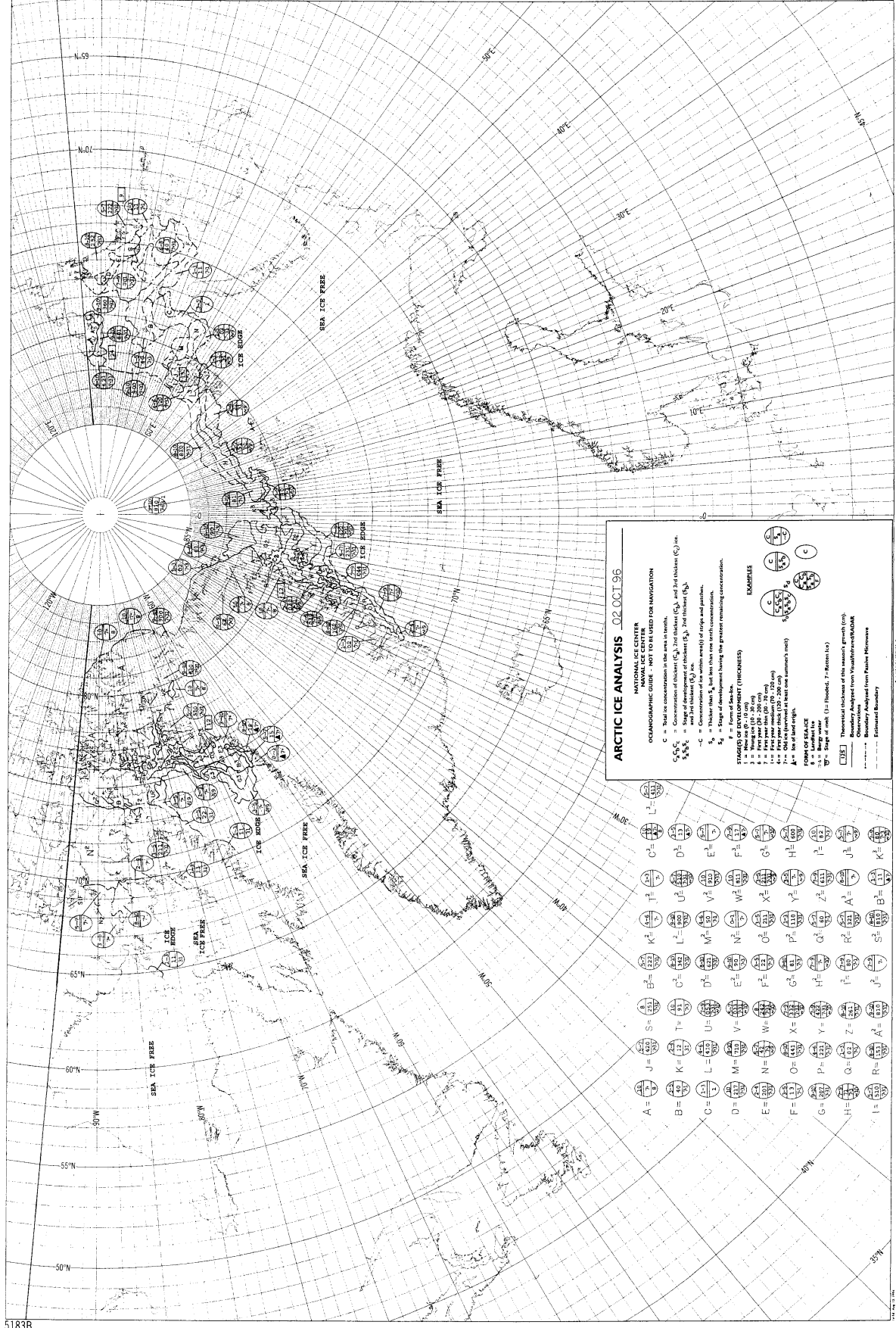
552 = Thin ice (8265-8280 cm)

553 = Thin ice (8280-8295

**Refer to 1996 Special Arctic
Supplement for this Chart**



**Refer to 1996 Special Arctic
Supplement for this Chart**

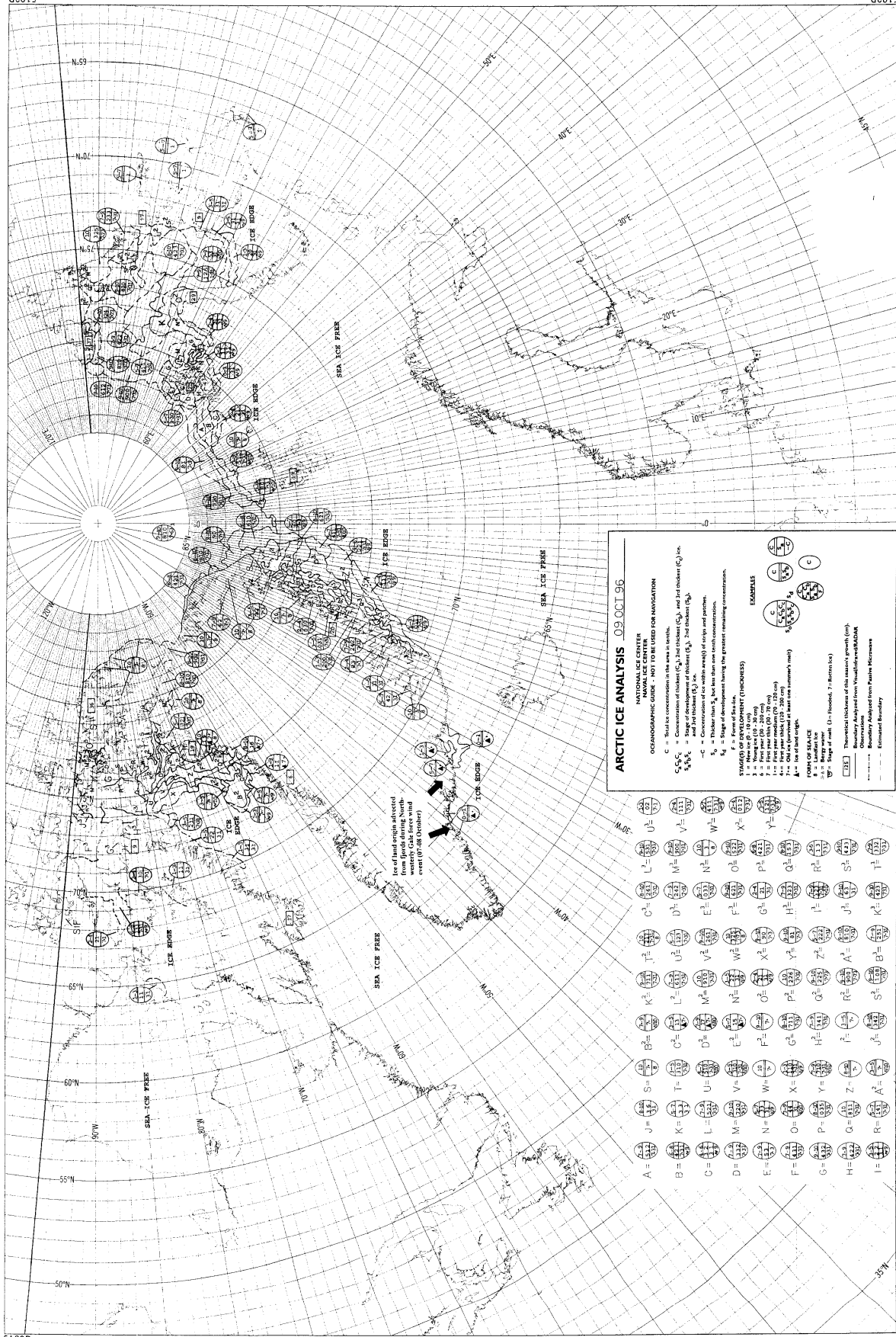


ARCTIC ICE ANALYSIS 02 OCT 96

NATIONAL ICE CENTER
NAVAL ICE CENTER
NAVAL OCEANOGRAPHIC OFFICE FOR NAVIGATION

SYMBOLS:
C = Thick ice concentration (C₁) and 1st thickness (C₁) in
S, S₁, S₂ = Stage of development of thickness (S₁, 2nd thickness (C₂),
and 3rd thickness (C₃), ice.
S₁ = Thicker than S₂ and less than new ice concentration.
S₂ = Stage of development having the greatest remaining concentration.
F = Form of Sea Ice.
I = Ice on land (0-100%).
I₁ = Ice on land (0-100%).
I₂ = Ice on land (0-100%).
I₃ = Ice on land (0-100%).
I₄ = Ice on land (0-100%).
I₅ = Ice on land (0-100%).
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I₇ = Ice on land (0-100%).
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I₉ = Ice on land (0-100%).
I₁₀ = Ice on land (0-100%).
I₁₁ = Ice on land (0-100%).
I₁₂ = Ice on land (0-100%).
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I₉₇ = Ice on land (0-100%).
I₉₈ = Ice on land (0-100%).
I₉₉ = Ice on land (0-100%).
I₁₀₀ = Ice on land (0-100%).

Refer to 1996 Special Arctic
Supplement for this Chart



ARCTIC ICE ANALYSIS 09 OCT 96

NATIONAL ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION

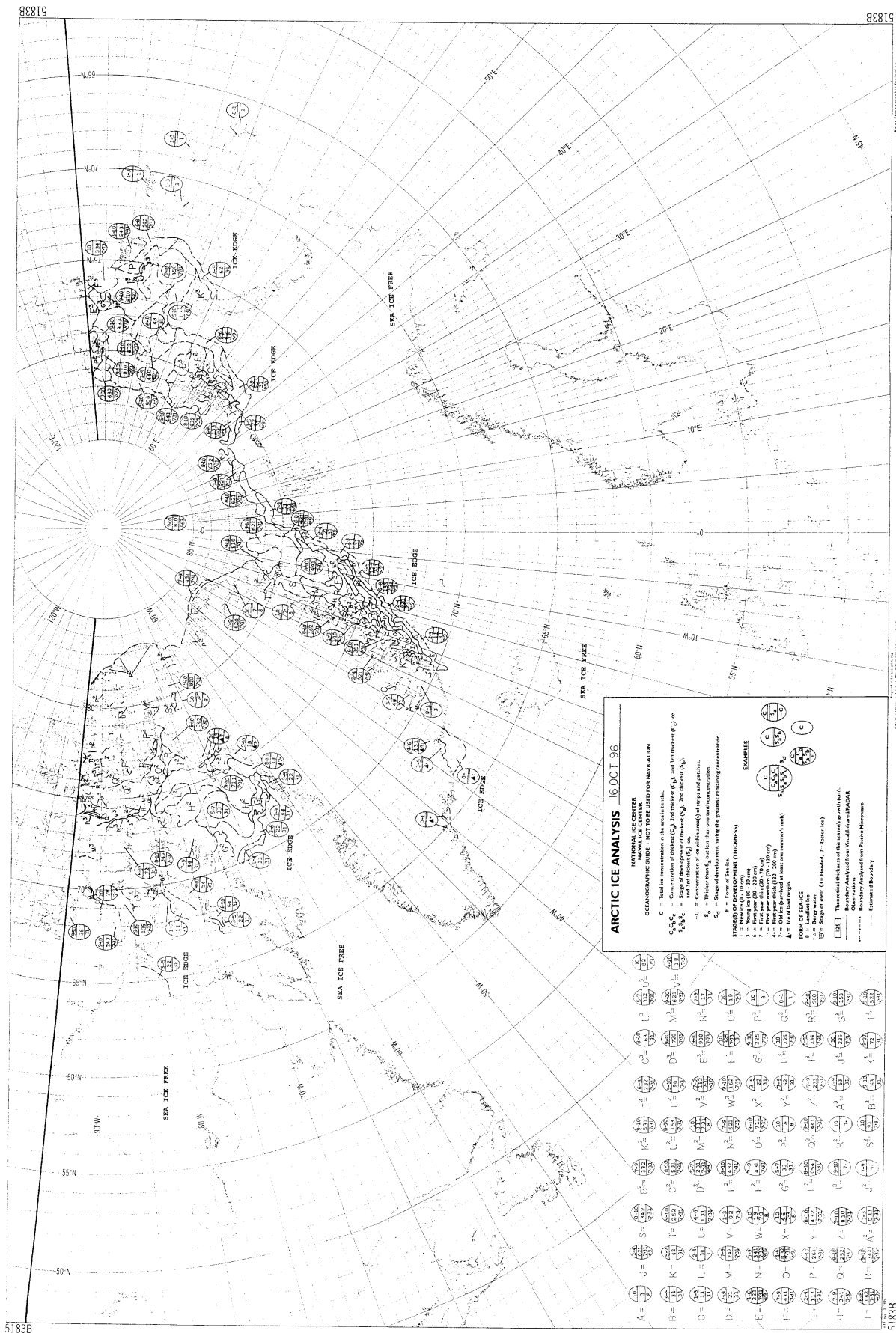
CONCENTRATION
C = Total ice concentration in the area to which.
C₁ C₂ C₃ = Concentration of ice in 1st, 2nd, and 3rd thickness (C₁, C₂, and 3rd thickness (C₃)).
C₁ C₂ C₃ = Concentration of ice in 1st, 2nd, and 3rd thickness (C₁, C₂, and 3rd thickness (C₃)).
C₁ C₂ C₃ = Concentration of ice in 1st, 2nd, and 3rd thickness (C₁, C₂, and 3rd thickness (C₃)).

THICKNESS
T = Thickness of ice in feet.
T₁ T₂ T₃ = Thickness of ice in 1st, 2nd, and 3rd thickness (T₁, T₂, and 3rd thickness (T₃)).
T₁ T₂ T₃ = Thickness of ice in 1st, 2nd, and 3rd thickness (T₁, T₂, and 3rd thickness (T₃)).

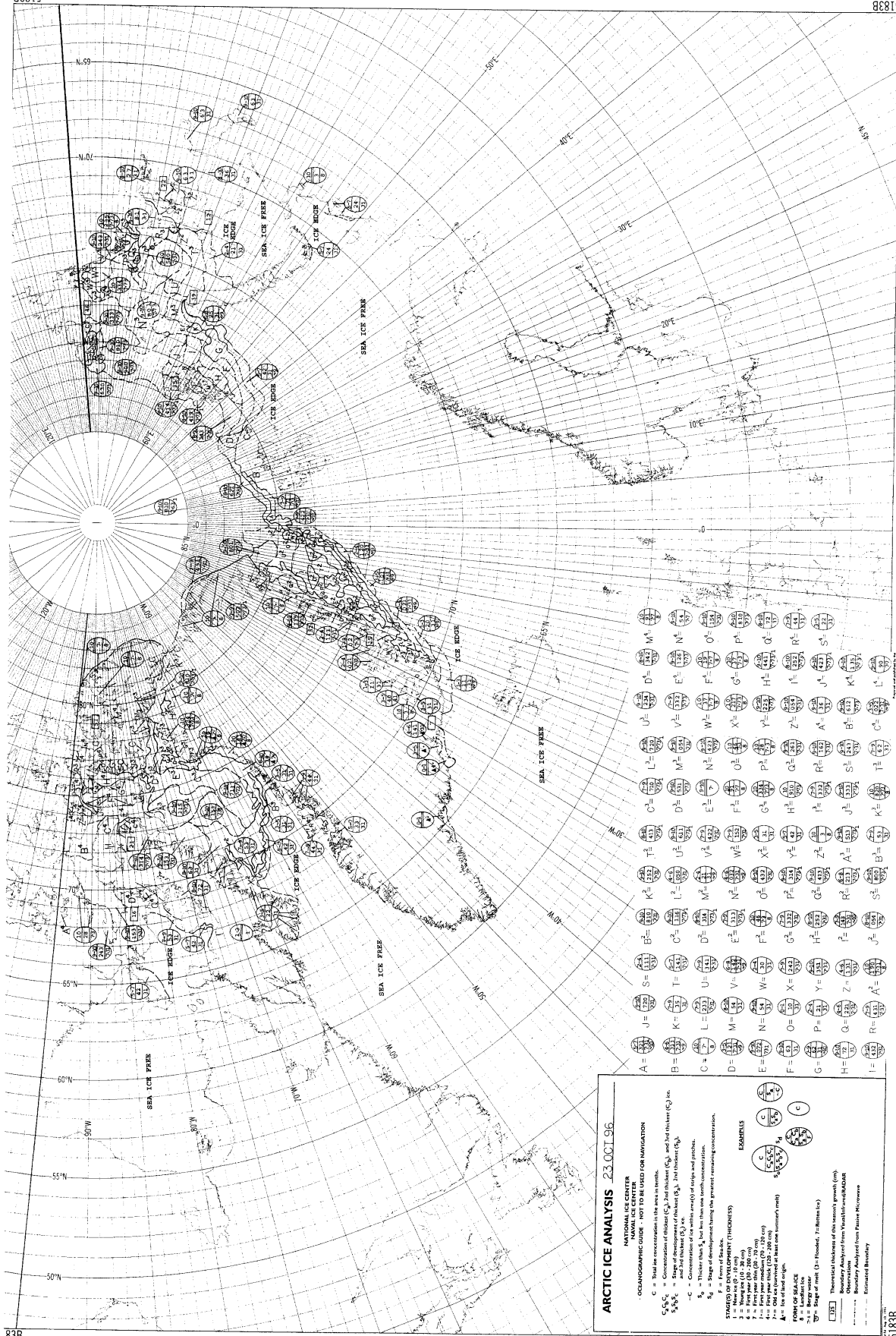
STAGES OF DEVELOPMENT (THICKNESS)
1 = New ice (0 - 30 cm)
2 = Young ice (30 - 60 cm)
3 = First year ice (60 - 100 cm)
4 = Second year ice (100 - 150 cm)
5 = Third year ice (150 - 200 cm)
6 = Old ice (200 cm or more)

ICE TYPE
A = Landfast ice
B = Loose ice
C = Drift ice
D = Iceberg
E = Ice island
F = Ice shelf
G = Ice plateau
H = Ice ridge
I = Ice shelf
J = Ice plateau
K = Ice island
L = Ice shelf
M = Ice plateau
N = Ice ridge
O = Ice shelf
P = Ice plateau
Q = Ice island
R = Ice shelf
S = Ice plateau
T = Ice ridge
U = Ice shelf
V = Ice plateau
W = Ice island
X = Ice shelf
Y = Ice plateau
Z = Ice ridge
AA = Ice shelf
AB = Ice plateau
AC = Ice island
AD = Ice shelf
AE = Ice plateau
AF = Ice ridge
AG = Ice shelf
AH = Ice plateau
AI = Ice island
AJ = Ice shelf
AK = Ice plateau
AL = Ice ridge
AM = Ice shelf
AN = Ice plateau
AO = Ice island
AP = Ice shelf
AQ = Ice plateau
AR = Ice ridge
AS = Ice shelf
AT = Ice plateau
AU = Ice island
AV = Ice shelf
AW = Ice plateau
AX = Ice ridge
AY = Ice shelf
AZ = Ice plateau
BA = Ice island
BB = Ice shelf
BC = Ice plateau
BD = Ice ridge
BE = Ice shelf
BF = Ice plateau
BG = Ice island
BH = Ice shelf
BI = Ice plateau
BJ = Ice ridge
BK = Ice shelf
BL = Ice plateau
BM = Ice island
BN = Ice shelf
BO = Ice plateau
BP = Ice ridge
BQ = Ice shelf
BR = Ice plateau
BS = Ice island
BT = Ice shelf
BU = Ice plateau
BV = Ice ridge
BW = Ice shelf
BX = Ice plateau
BY = Ice island
BZ = Ice shelf
CA = Ice plateau
CB = Ice ridge
CC = Ice shelf
CD = Ice plateau
CE = Ice island
CF = Ice shelf
CG = Ice plateau
CH = Ice ridge
CI = Ice shelf
CJ = Ice plateau
CK = Ice island
CL = Ice shelf
CM = Ice plateau
CN = Ice ridge
CO = Ice shelf
CP = Ice plateau
CQ = Ice island
CR = Ice shelf
CS = Ice plateau
CT = Ice ridge
CU = Ice shelf
CV = Ice plateau
CW = Ice island
CX = Ice shelf
CY = Ice plateau
CZ = Ice ridge
DA = Ice shelf
DB = Ice plateau
DC = Ice island
DD = Ice shelf
DE = Ice plateau
DF = Ice ridge
DG = Ice shelf
DH = Ice plateau
DI = Ice island
DJ = Ice shelf
DK = Ice plateau
DL = Ice ridge
DM = Ice shelf
DN = Ice plateau
DO = Ice island
DP = Ice shelf
DQ = Ice plateau
DR = Ice ridge
DS = Ice shelf
DT = Ice plateau
DU = Ice island
DV = Ice shelf
DW = Ice plateau
DX = Ice ridge
DY = Ice shelf
DZ = Ice plateau
EA = Ice island
EB = Ice shelf
EC = Ice plateau
ED = Ice ridge
EE = Ice shelf
EF = Ice plateau
EG = Ice island
EH = Ice shelf
EI = Ice plateau
EJ = Ice ridge
EK = Ice shelf
EL = Ice plateau
EM = Ice island
EN = Ice shelf
EO = Ice plateau
EP = Ice ridge
EQ = Ice shelf
ER = Ice plateau
ES = Ice island
ET = Ice shelf
EU = Ice plateau
EV = Ice ridge
EW = Ice shelf
EX = Ice plateau
EY = Ice island
EZ = Ice shelf
FA = Ice plateau
FB = Ice ridge
FC = Ice shelf
FD = Ice plateau
FE = Ice island
FF = Ice shelf
FG = Ice plateau
FH = Ice ridge
FI = Ice shelf
FJ = Ice plateau
FK = Ice island
FL = Ice shelf
FM = Ice plateau
FN = Ice ridge
FO = Ice shelf
FP = Ice plateau
FQ = Ice island
FR = Ice shelf
FS = Ice plateau
FT = Ice ridge
FU = Ice shelf
FV = Ice plateau
FW = Ice island
FX = Ice shelf
FY = Ice plateau
FZ = Ice ridge
GA = Ice shelf
GB = Ice plateau
GC = Ice island
GD = Ice shelf
GE = Ice plateau
GF = Ice ridge
GG = Ice shelf
GH = Ice plateau
GI = Ice island
GJ = Ice shelf
GK = Ice plateau
GL = Ice ridge
GM = Ice shelf
GN = Ice plateau
GO = Ice island
GP = Ice shelf
GQ = Ice plateau
GR = Ice ridge
GS = Ice shelf
GT = Ice plateau
GU = Ice island
GV = Ice shelf
GW = Ice plateau
GX = Ice ridge
GY = Ice shelf
GZ = Ice plateau
HA = Ice island
HB = Ice shelf
HC = Ice plateau
HD = Ice ridge
HE = Ice shelf
HF = Ice plateau
HG = Ice island
HH = Ice shelf
HI = Ice plateau
HJ = Ice ridge
HK = Ice shelf
HL = Ice plateau
HM = Ice island
HN = Ice shelf
HO = Ice plateau
HP = Ice ridge
HQ = Ice shelf
HR = Ice plateau
HS = Ice island
HT = Ice shelf
HU = Ice plateau
HV = Ice ridge
HW = Ice shelf
HX = Ice plateau
HY = Ice island
HZ = Ice shelf
IA = Ice plateau
IB = Ice ridge
IC = Ice shelf
ID = Ice plateau
IE = Ice island
IF = Ice shelf
IG = Ice plateau
IH = Ice ridge
II = Ice shelf
IJ = Ice plateau
IK = Ice island
IL = Ice shelf
IM = Ice plateau
IN = Ice ridge
IO = Ice shelf
IP = Ice plateau
IQ = Ice island
IR = Ice shelf
IS = Ice plateau
IT = Ice ridge
IU = Ice shelf
IV = Ice plateau
IW = Ice island
IX = Ice shelf
IY = Ice plateau
IZ = Ice ridge
JA = Ice shelf
JB = Ice plateau
JC = Ice island
JD = Ice shelf
JE = Ice plateau
JF = Ice ridge
JG = Ice shelf
JH = Ice plateau
JI = Ice island
JJ = Ice shelf
JK = Ice plateau
JL = Ice ridge
JM = Ice shelf
JN = Ice plateau
JO = Ice island
JP = Ice shelf
JQ = Ice plateau
JR = Ice ridge
JS = Ice shelf
JT = Ice plateau
JU = Ice island
JV = Ice shelf
JW = Ice plateau
JX = Ice ridge
JY = Ice shelf
JZ = Ice plateau
KA = Ice island
KB = Ice shelf
KC = Ice plateau
KD = Ice ridge
KE = Ice shelf
KF = Ice plateau
KG = Ice island
KH = Ice shelf
KI = Ice plateau
KJ = Ice ridge
KK = Ice shelf
KL = Ice plateau
KM = Ice island
KN = Ice shelf
KO = Ice plateau
KP = Ice ridge
KQ = Ice shelf
KR = Ice plateau
KS = Ice island
KT = Ice shelf
KU = Ice plateau
KV = Ice ridge
KW = Ice shelf
KX = Ice plateau
KY = Ice island
KZ = Ice shelf
LA = Ice plateau
LB = Ice ridge
LC = Ice shelf
LD = Ice plateau
LE = Ice island
LF = Ice shelf
LG = Ice plateau
LH = Ice ridge
LI = Ice shelf
LJ = Ice plateau
LK = Ice island
LL = Ice shelf
LM = Ice plateau
LN = Ice ridge
LO = Ice shelf
LP = Ice plateau
LQ = Ice island
LR = Ice shelf
LS = Ice plateau
LT = Ice ridge
LU = Ice shelf
LV = Ice plateau
LW = Ice island
LX = Ice shelf
LY = Ice plateau
LZ = Ice ridge
MA = Ice shelf
MB = Ice plateau
MC = Ice island
MD = Ice shelf
ME = Ice plateau
MF = Ice ridge
MG = Ice shelf
MH = Ice plateau
MI = Ice island
MJ = Ice shelf
MK = Ice plateau
ML = Ice ridge
MM = Ice shelf
MN = Ice plateau
MO = Ice island
MP = Ice shelf
MQ = Ice plateau
MR = Ice ridge
MS = Ice shelf
MT = Ice plateau
MU = Ice island
MV = Ice shelf
MW = Ice plateau
MX = Ice ridge
MY = Ice shelf
MZ = Ice plateau
NA = Ice island
NB = Ice shelf
NC = Ice plateau
ND = Ice ridge
NE = Ice shelf
NF = Ice plateau
NG = Ice island
NH = Ice shelf
NI = Ice plateau
NJ = Ice ridge
NK = Ice shelf
NL = Ice plateau
NM = Ice island
NN = Ice shelf
NO = Ice plateau
NP = Ice ridge
NQ = Ice shelf
NR = Ice plateau
NS = Ice island
NT = Ice shelf
NU = Ice plateau
NV = Ice ridge
NW = Ice shelf
NX = Ice plateau
NY = Ice island
NZ = Ice shelf
OA = Ice plateau
OB = Ice ridge
OC = Ice shelf
OD = Ice plateau
OE = Ice island
OF = Ice shelf
OG = Ice plateau
OH = Ice ridge
OI = Ice shelf
OJ = Ice plateau
OK = Ice island
OL = Ice shelf
OM = Ice plateau
ON = Ice ridge
OO = Ice shelf
OP = Ice plateau
OQ = Ice island
OR = Ice shelf
OS = Ice plateau
OT = Ice ridge
OU = Ice shelf
OV = Ice plateau
OW = Ice island
OX = Ice shelf
OY = Ice plateau
OZ = Ice ridge
PA = Ice shelf
PB = Ice plateau
PC = Ice island
PD = Ice shelf
PE = Ice plateau
PF = Ice ridge
PG = Ice shelf
PH = Ice plateau
PI = Ice island
PJ = Ice shelf
PK = Ice plateau
PL = Ice ridge
PM = Ice shelf
PN = Ice plateau
PO = Ice island
PP = Ice shelf
PQ = Ice plateau
PR = Ice ridge
PS = Ice shelf
PT = Ice plateau
PU = Ice island
PV = Ice shelf
PW = Ice plateau
PX = Ice ridge
PY = Ice shelf
PZ = Ice plateau
QA = Ice island
QB = Ice shelf
QC = Ice plateau
QD = Ice ridge
QE = Ice shelf
QF = Ice plateau
QG = Ice island
QH = Ice shelf
QI = Ice plateau
QJ = Ice ridge
QK = Ice shelf
QL = Ice plateau
QM = Ice island
QN = Ice shelf
QO = Ice plateau
QP = Ice ridge
QQ = Ice shelf
QR = Ice plateau
QS = Ice island
QT = Ice shelf
QU = Ice plateau
QV = Ice ridge
QW = Ice shelf
QX = Ice plateau
QY = Ice island
QZ = Ice shelf
RA = Ice plateau
RB = Ice ridge
RC = Ice shelf
RD = Ice plateau
RE = Ice island
RF = Ice shelf
RG = Ice plateau
RH = Ice ridge
RI = Ice shelf
RJ = Ice plateau
RK = Ice island
RL = Ice shelf
RM = Ice plateau
RN = Ice ridge
RO = Ice shelf
RP = Ice plateau
RQ = Ice island
RR = Ice shelf
RS = Ice plateau
RT = Ice ridge
RU = Ice shelf
RV = Ice plateau
RW = Ice island
RX = Ice shelf
RY = Ice plateau
RZ = Ice ridge
SA = Ice shelf
SB = Ice plateau
SC = Ice island
SD = Ice shelf
SE = Ice plateau
SF = Ice ridge
SG = Ice shelf
SH = Ice plateau
SI = Ice island
SJ = Ice shelf
SK = Ice plateau
SL = Ice ridge
SM = Ice shelf
SN = Ice plateau
SO = Ice island
SP = Ice shelf
SQ = Ice plateau
SR = Ice ridge
SS = Ice shelf
ST = Ice plateau
SU = Ice island
SV = Ice shelf
SW = Ice plateau
SX = Ice ridge
SY = Ice shelf
SZ = Ice plateau
TA = Ice island
TB = Ice shelf
TC = Ice plateau
TD = Ice ridge
TE = Ice shelf
TF = Ice plateau
TG = Ice island
TH = Ice shelf
TI = Ice plateau
TJ = Ice ridge
TK = Ice shelf
TL = Ice plateau
TM = Ice island
TN = Ice shelf
TO = Ice plateau
TP = Ice ridge
TQ = Ice shelf
TR = Ice plateau
TS = Ice island
TT = Ice shelf
TU = Ice plateau
TV = Ice ridge
TW = Ice shelf
TX = Ice plateau
TY = Ice island
TZ = Ice shelf
UA = Ice plateau
UB = Ice ridge
UC = Ice shelf
UD = Ice plateau
UE = Ice island
UF = Ice shelf
UG = Ice plateau
UH = Ice ridge
UI = Ice shelf
UJ = Ice plateau
UK = Ice island
UL = Ice shelf
UM = Ice plateau
UN = Ice ridge
UO = Ice shelf
UP = Ice plateau
UQ = Ice island
UR = Ice shelf
US = Ice plateau
UT = Ice ridge
UV = Ice shelf
UW = Ice plateau
UX = Ice island
UY = Ice shelf
UZ = Ice plateau
VA = Ice island
VB = Ice shelf
VC = Ice plateau
VD = Ice ridge
VE = Ice shelf
VF = Ice plateau
VG = Ice island
VH = Ice shelf
VI = Ice plateau
VJ = Ice ridge
VK = Ice shelf
VL = Ice plateau
VM = Ice island
VN = Ice shelf
VO = Ice plateau
VP = Ice ridge
VQ = Ice shelf
VR = Ice plateau
VS = Ice island
VT = Ice shelf
VU = Ice plateau
VV = Ice ridge
VW = Ice shelf
VX = Ice plateau
VY = Ice island
VZ = Ice shelf
WA = Ice plateau
WB = Ice ridge
WC = Ice shelf
WD = Ice plateau
WE = Ice island
WF = Ice shelf
WG = Ice plateau
WH = Ice ridge
WI = Ice shelf
WJ = Ice plateau
WK = Ice island
WL = Ice shelf
WM = Ice plateau
WN = Ice ridge
WO = Ice shelf
WP = Ice plateau
WQ = Ice island
WR = Ice shelf
WS = Ice plateau
WT = Ice ridge
WU = Ice shelf
WV = Ice plateau
WW = Ice island
WX = Ice shelf
WY = Ice plateau
WZ = Ice ridge
XA = Ice shelf
XB = Ice plateau
XC = Ice island
XD = Ice shelf
XE = Ice plateau
XF = Ice ridge
XG = Ice shelf
XH = Ice plateau
XI = Ice island
XJ = Ice shelf
XK = Ice plateau
XL = Ice ridge
XM = Ice shelf
XN = Ice plateau
XO = Ice island
XP = Ice shelf
XQ = Ice plateau
XR = Ice ridge
XS = Ice shelf
XT = Ice plateau
XU = Ice island
XV = Ice shelf
XW = Ice plateau
XX = Ice ridge
XY = Ice shelf
XZ = Ice plateau
YA = Ice island
YB = Ice shelf
YC = Ice plateau
YD = Ice ridge
YE = Ice shelf
YF = Ice plateau
YG = Ice island
YH = Ice shelf
YI = Ice plateau
YJ = Ice ridge
YK = Ice shelf
YL = Ice plateau
YM = Ice island
YN = Ice shelf
YO = Ice plateau
YP = Ice ridge
YQ = Ice shelf
YR = Ice plateau
YS = Ice island
YT = Ice shelf
YU = Ice plateau
YV = Ice ridge
YW = Ice shelf
YX = Ice plateau
YZ = Ice island
ZA = Ice shelf
ZB = Ice plateau
ZC = Ice island
ZD = Ice shelf
ZE = Ice plateau
ZF = Ice ridge
ZG = Ice shelf
ZH = Ice plateau
ZI = Ice island
ZJ = Ice shelf
ZK = Ice plateau
ZL = Ice ridge
ZM = Ice shelf
ZN = Ice plateau
ZO = Ice island
ZP = Ice shelf
ZQ = Ice plateau
ZR = Ice ridge
ZS = Ice shelf
ZT = Ice plateau
ZU = Ice island
ZV = Ice shelf
ZW = Ice plateau
ZX = Ice ridge
ZY = Ice shelf
ZZ = Ice plateau

**Refer to 1996 Special Arctic
Supplement for this Chart**

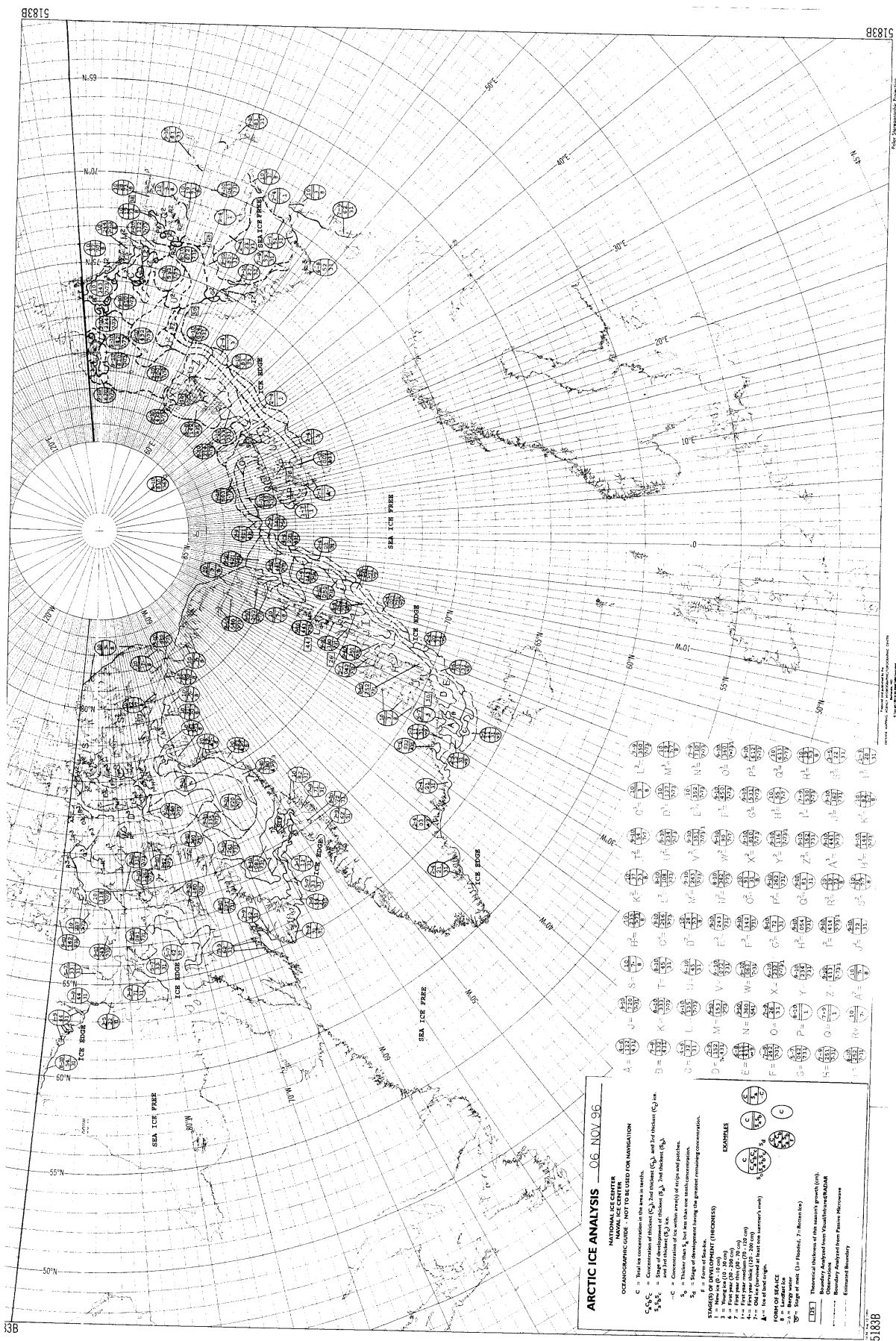


**Refer to 1996 Special Arctic
Supplement for this Chart**



**Refer to 1996 Special Arctic
Supplement for this Chart**

Refer to 1996 Special Arctic
Supplement for this Chart



ARCTIC ICE ANALYSIS 06 NOV 96

NATIONAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION

C = Total ice concentration in the area in tenths.
C₁, C₂, C₃ = Concentrations of thickest (C₁), 2nd thickest (C₂), and 3rd thickest (C₃) ice.
S₁, S₂, S₃ = Area (in percent) of thickest (S₁), 2nd thickest (S₂), and 3rd thickest (S₃) ice.
-C = Concentration of ice within area(s) of strip and patches.
S₀ = Thicker than S₁ but less than one tenth concentration.
S₀ = Stage of development during the greatest prevailing concentration.

STAGES OF DEVELOPMENT (THICKNESS)

1 = New ice (0-120 cm)
2 = Young ice (120-250 cm)
3 = First year ice (250-500 cm)
4 = Second year ice (500-1000 cm)
5 = Third year ice (1000-1500 cm)
6 = Old ice (1500-2000 cm)
7 = Ice of undetermined age (2000 cm and over)

A = Ice of undetermined age (2000 cm and over)
B = Ice of undetermined age (2000 cm and over)
C = Ice of undetermined age (2000 cm and over)

Examples:

1 = New ice (0-120 cm)
2 = Young ice (120-250 cm)
3 = First year ice (250-500 cm)
4 = Second year ice (500-1000 cm)
5 = Third year ice (1000-1500 cm)
6 = Old ice (1500-2000 cm)
7 = Ice of undetermined age (2000 cm and over)

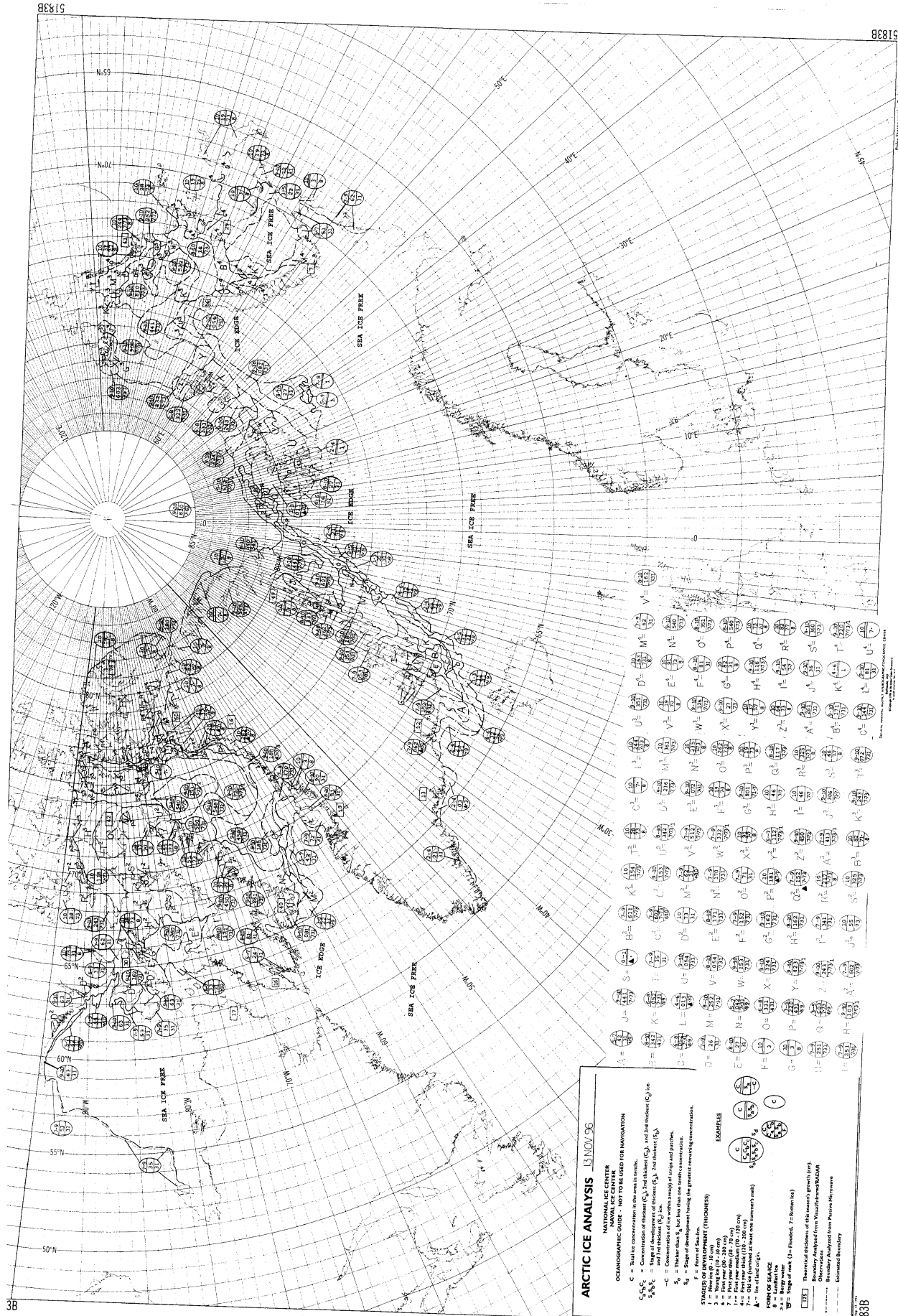
Legend:

1 = New ice (0-120 cm)
2 = Young ice (120-250 cm)
3 = First year ice (250-500 cm)
4 = Second year ice (500-1000 cm)
5 = Third year ice (1000-1500 cm)
6 = Old ice (1500-2000 cm)
7 = Ice of undetermined age (2000 cm and over)

Notes:

1 = New ice (0-120 cm)
2 = Young ice (120-250 cm)
3 = First year ice (250-500 cm)
4 = Second year ice (500-1000 cm)
5 = Third year ice (1000-1500 cm)
6 = Old ice (1500-2000 cm)
7 = Ice of undetermined age (2000 cm and over)

Refer to 1996 Special Arctic
Supplement for this Chart



ARCTIC ICE ANALYSIS 13 NOV 96

**NATIONAL ICE CENTER
NAVAL ICT CENTER**

OSCAROGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION

CONCENTRATION OF THICKNESS

- C_1 = First ice concentration in the area in tenths.
- C_2 = Second ice concentration in the area in tenths.
- C_3 = Third ice concentration in the area in tenths.
- C_4 = Fourth ice concentration in the area in tenths.
- C_5 = Fifth ice concentration in the area in tenths.
- C_6 = Sixth ice concentration in the area in tenths.
- C_7 = Seventh ice concentration in the area in tenths.
- C_8 = Eighth ice concentration in the area in tenths.
- C_9 = Ninth ice concentration in the area in tenths.
- C_{10} = Tenth ice concentration in the area in tenths.

THICKNESS

- T_1 = Thicker than T_2 , but less than one tenth concentration.
- T_2 = Thicker than T_3 , but less than one tenth concentration.
- T_3 = Thicker than T_4 , but less than one tenth concentration.
- T_4 = Thicker than T_5 , but less than one tenth concentration.
- T_5 = Thicker than T_6 , but less than one tenth concentration.
- T_6 = Thicker than T_7 , but less than one tenth concentration.
- T_7 = Thicker than T_8 , but less than one tenth concentration.
- T_8 = Thicker than T_9 , but less than one tenth concentration.
- T_9 = Thicker than T_{10} , but less than one tenth concentration.
- T_{10} = Thicker than T_{11} , but less than one tenth concentration.

STAGES OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0-10 cm)
- 2 = First year (10-20 cm)
- 3 = Second year (20-30 cm)
- 4 = Third year (30-40 cm)
- 5 = Fourth year (40-50 cm)
- 6 = Fifth year (50-60 cm)
- 7 = Old ice (60-70 cm)
- 8 = Old ice (70-80 cm)
- 9 = Old ice (80-90 cm)
- 10 = Old ice (90-100 cm)

POINTS OF ORIGIN

- A = Air
- B = Bay
- C = Cape
- D = Delta
- E = Estuary
- F = Fjord
- G = Gulf
- H = Harbor
- I = Inlet
- J = Jetty
- K = Key
- L = Lake
- M = Mouth
- N = Narrows
- O = Ocean
- P = Peninsula
- Q = Quasi
- R = River
- S = Strait
- T = Trench
- U = Upland
- V = Valley
- W = Water
- X = X-land
- Y = Y-land
- Z = Z-land

EXAMPLES

$C_1 C_2 C_3 C_4 C_5 C_6 C_7 C_8 C_9 C_{10}$

$T_1 T_2 T_3 T_4 T_5 T_6 T_7 T_8 T_9 T_{10}$

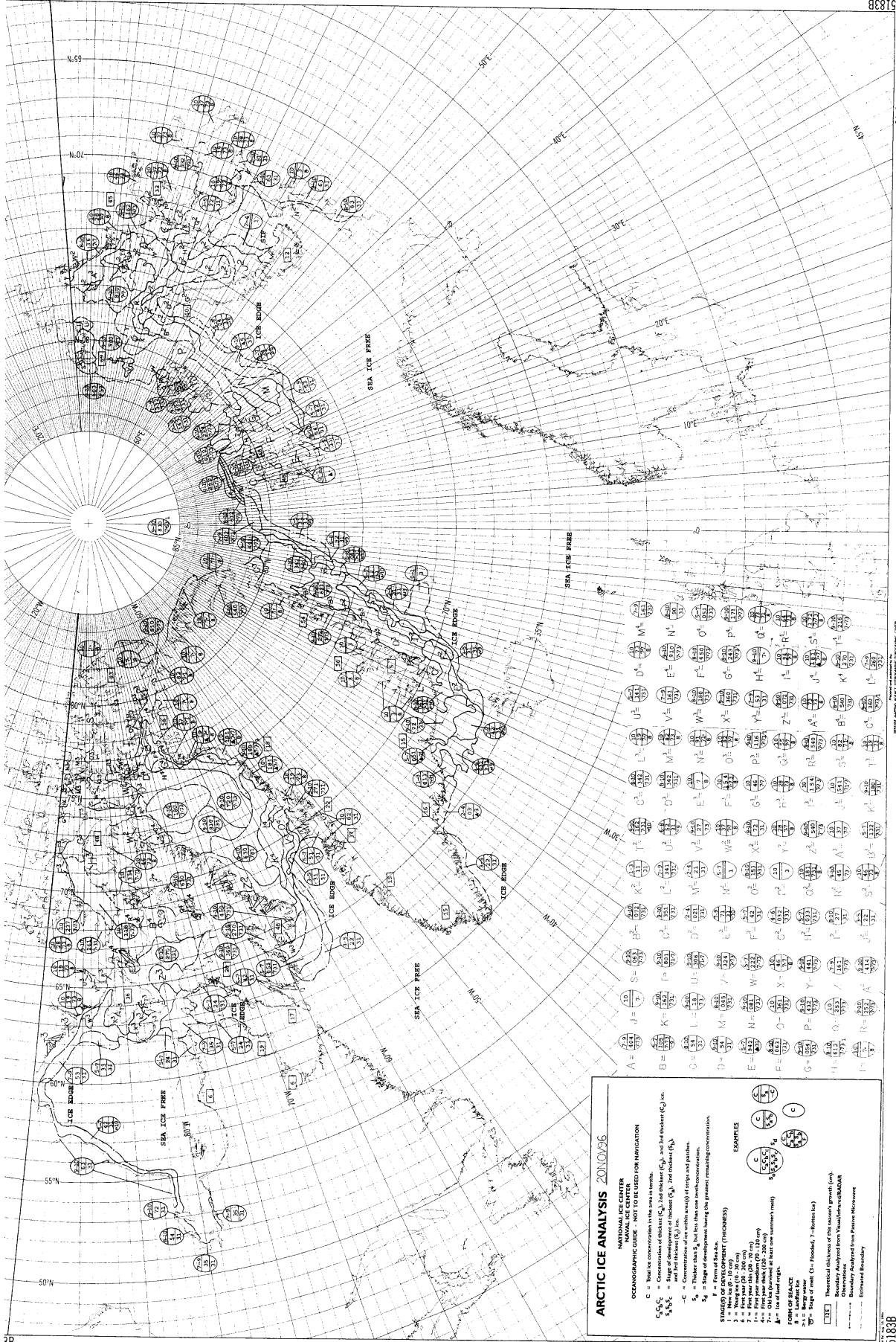
$S_1 S_2 S_3 S_4 S_5 S_6 S_7 S_8 S_9 S_{10}$

$A B C D E F G H I J K L M N O P Q R S T U V W X Y Z$

BOUNDARY ANALYSIS

- Boundary analyzed from Visual/Infrared/Radar
- Boundary analyzed from Passive Microwave
- Estimated Boundary

Refer to 1996 Special Arctic
Supplement for this Chart



ARCTIC ICE ANALYSIS 20NOV95

NATIONAL ICE CENTER
NAVAL ICE CENTER

OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION

C = Total ice concentration in the area in tenths.

C_1, C_2, C_3 = Concentrations of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.

S_1, S_2, S_3 = Stages of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.

S_1 = Thicker than S_2 , but less than one week concentration.

S_2 = Thicker than S_3 , but less than one week concentration.

S_3 = Stage of development having the greatest remaining concentration.

STAGES OF DEVELOPMENT (THICKNESS)

1 = New ice (0-10 cm)

2 = Young ice (10-20 cm)

3 = First year ice (20-200 cm)

4 = First year ice (200-400 cm)

5 = First year ice (400-600 cm)

6 = First year ice (600-800 cm)

7 = First year ice (800-1000 cm)

8 = Old ice (1000-1500 cm)

9 = Old ice (1500-2000 cm)

10 = Ice of indeterminate origin.

POINTS OF INTEREST

1 = Heavy water

2 = Stage of melt (1 = Partial, 2 = Complete)

3 = Theoretical thickness of the season's growth (cm).

4 = Boundary Analyzed from Visual/Infra-Red/MAR

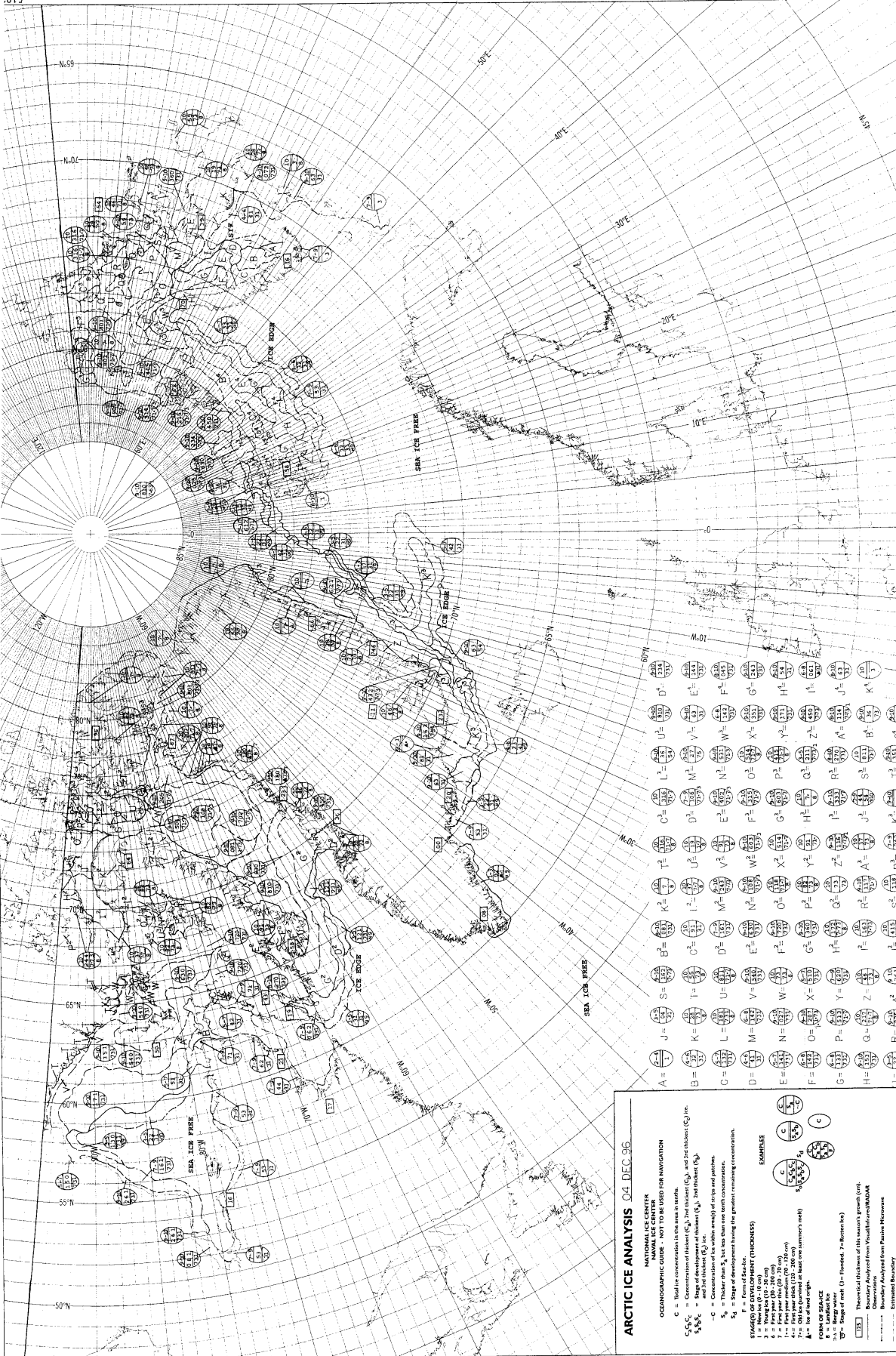
5 = Boundary Analyzed from Passive Microwave

6 = Estimated Boundary

**Refer to 1996 Special Arctic
Supplement for this Chart**



**Refer to 1996 Special Arctic
Supplement for this Chart**



ARCTIC ICE ANALYSIS 04 DEC 96

NATIONAL ICE CENTER
NAVAL ICE CENTER

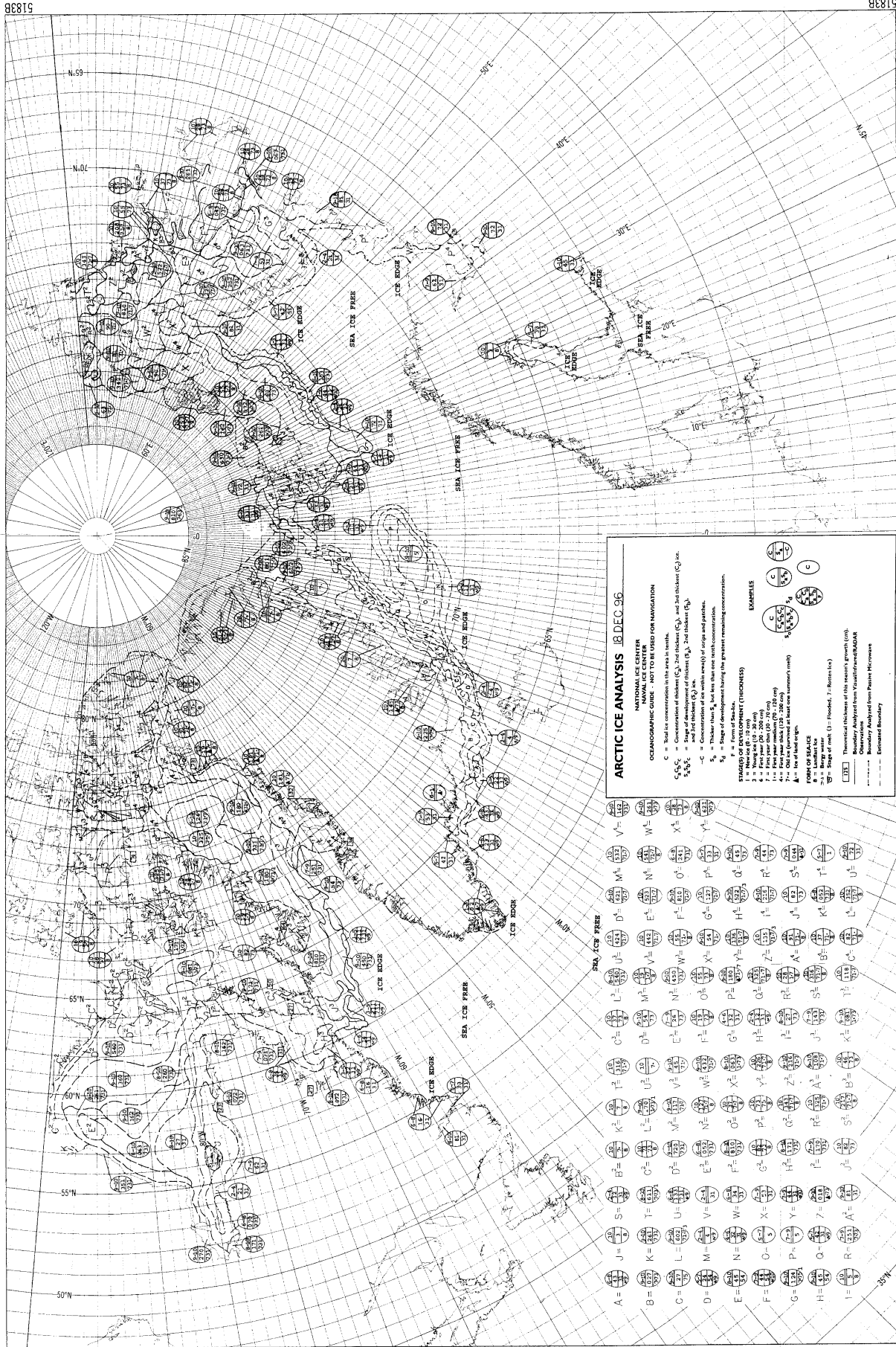
ICE CONCENTRATION GUIDE - NOT TO BE USED FOR NAVIGATION

- C = Total ice concentration in the area in tenths.
- C₁ C₂ C₃ = Concentration of distinct C₁, 2nd thickest C₂, and 3rd thickest C₃ in.
- S₁ S₂ S₃ = Thickness of ice in tenths (S₁, 2nd thickest S₂, and 3rd thickest S₃).
- C = Concentration of ice within area(s) of ice and patch.
- S₁ = Thicker than S₂ but less than one tenth concentration.
- S₂ = Thicker than S₃ but less than one tenth concentration.
- S₃ = Thicker than S₄ but less than one tenth concentration.
- S₄ = Stage of development.
- STAGE OF DEVELOPMENT (THICKNESS)
- 1 = New ice (0-10 cm)
- 2 = First year ice (10-20 cm)
- 3 = First year ice (20-30 cm)
- 4 = First year ice (30-40 cm)
- 5 = First year ice (40-50 cm)
- 6 = First year ice (50-60 cm)
- 7 = Old ice (60-70 cm)
- 8 = Old ice (70-80 cm)
- 9 = Old ice (80-90 cm)
- 10 = Old ice (90-100 cm)
- 11 = Old ice (100-110 cm)
- 12 = Old ice (110-120 cm)
- 13 = Old ice (120-130 cm)
- 14 = Old ice (130-140 cm)
- 15 = Old ice (140-150 cm)
- 16 = Old ice (150-160 cm)
- 17 = Old ice (160-170 cm)
- 18 = Old ice (170-180 cm)
- 19 = Old ice (180-190 cm)
- 20 = Old ice (190-200 cm)
- 21 = Old ice (200-210 cm)
- 22 = Old ice (210-220 cm)
- 23 = Old ice (220-230 cm)
- 24 = Old ice (230-240 cm)
- 25 = Old ice (240-250 cm)
- 26 = Old ice (250-260 cm)
- 27 = Old ice (260-270 cm)
- 28 = Old ice (270-280 cm)
- 29 = Old ice (280-290 cm)
- 30 = Old ice (290-300 cm)
- 31 = Old ice (300-310 cm)
- 32 = Old ice (310-320 cm)
- 33 = Old ice (320-330 cm)
- 34 = Old ice (330-340 cm)
- 35 = Old ice (340-350 cm)
- 36 = Old ice (350-360 cm)
- 37 = Old ice (360-370 cm)
- 38 = Old ice (370-380 cm)
- 39 = Old ice (380-390 cm)
- 40 = Old ice (390-400 cm)
- 41 = Old ice (400-410 cm)
- 42 = Old ice (410-420 cm)
- 43 = Old ice (420-430 cm)
- 44 = Old ice (430-440 cm)
- 45 = Old ice (440-450 cm)
- 46 = Old ice (450-460 cm)
- 47 = Old ice (460-470 cm)
- 48 = Old ice (470-480 cm)
- 49 = Old ice (480-490 cm)
- 50 = Old ice (490-500 cm)
- 51 = Old ice (500-510 cm)
- 52 = Old ice (510-520 cm)
- 53 = Old ice (520-530 cm)
- 54 = Old ice (530-540 cm)
- 55 = Old ice (540-550 cm)
- 56 = Old ice (550-560 cm)
- 57 = Old ice (560-570 cm)
- 58 = Old ice (570-580 cm)
- 59 = Old ice (580-590 cm)
- 60 = Old ice (590-600 cm)
- 61 = Old ice (600-610 cm)
- 62 = Old ice (610-620 cm)
- 63 = Old ice (620-630 cm)
- 64 = Old ice (630-640 cm)
- 65 = Old ice (640-650 cm)
- 66 = Old ice (650-660 cm)
- 67 = Old ice (660-670 cm)
- 68 = Old ice (670-680 cm)
- 69 = Old ice (680-690 cm)
- 70 = Old ice (690-700 cm)
- 71 = Old ice (700-710 cm)
- 72 = Old ice (710-720 cm)
- 73 = Old ice (720-730 cm)
- 74 = Old ice (730-740 cm)
- 75 = Old ice (740-750 cm)
- 76 = Old ice (750-760 cm)
- 77 = Old ice (760-770 cm)
- 78 = Old ice (770-780 cm)
- 79 = Old ice (780-790 cm)
- 80 = Old ice (790-800 cm)
- 81 = Old ice (800-810 cm)
- 82 = Old ice (810-820 cm)
- 83 = Old ice (820-830 cm)
- 84 = Old ice (830-840 cm)
- 85 = Old ice (840-850 cm)
- 86 = Old ice (850-860 cm)
- 87 = Old ice (860-870 cm)
- 88 = Old ice (870-880 cm)
- 89 = Old ice (880-890 cm)
- 90 = Old ice (890-900 cm)
- 91 = Old ice (900-910 cm)
- 92 = Old ice (910-920 cm)
- 93 = Old ice (920-930 cm)
- 94 = Old ice (930-940 cm)
- 95 = Old ice (940-950 cm)
- 96 = Old ice (950-960 cm)
- 97 = Old ice (960-970 cm)
- 98 = Old ice (970-980 cm)
- 99 = Old ice (980-990 cm)
- 100 = Old ice (990-1000 cm)

FORM OF SPACE
1 = Ice
2 = Water
3 = Ice
4 = Water
5 = Ice
6 = Water
7 = Ice
8 = Water
9 = Ice
10 = Water
11 = Ice
12 = Water
13 = Ice
14 = Water
15 = Ice
16 = Water
17 = Ice
18 = Water
19 = Ice
20 = Water
21 = Ice
22 = Water
23 = Ice
24 = Water
25 = Ice
26 = Water
27 = Ice
28 = Water
29 = Ice
30 = Water
31 = Ice
32 = Water
33 = Ice
34 = Water
35 = Ice
36 = Water
37 = Ice
38 = Water
39 = Ice
40 = Water
41 = Ice
42 = Water
43 = Ice
44 = Water
45 = Ice
46 = Water
47 = Ice
48 = Water
49 = Ice
50 = Water
51 = Ice
52 = Water
53 = Ice
54 = Water
55 = Ice
56 = Water
57 = Ice
58 = Water
59 = Ice
60 = Water
61 = Ice
62 = Water
63 = Ice
64 = Water
65 = Ice
66 = Water
67 = Ice
68 = Water
69 = Ice
70 = Water
71 = Ice
72 = Water
73 = Ice
74 = Water
75 = Ice
76 = Water
77 = Ice
78 = Water
79 = Ice
80 = Water
81 = Ice
82 = Water
83 = Ice
84 = Water
85 = Ice
86 = Water
87 = Ice
88 = Water
89 = Ice
90 = Water
91 = Ice
92 = Water
93 = Ice
94 = Water
95 = Ice
96 = Water
97 = Ice
98 = Water
99 = Ice
100 = Water

**Refer to 1996 Special Arctic
Supplement for this Chart**

Refer to 1996 Special Arctic
Supplement for this Chart



ARCTIC ICE ANALYSIS 18 DEC 96

NATIONAL ICE CENTER
OCEANOGRAPHIC CODE - NOT TO BE USED FOR NAVIGATION

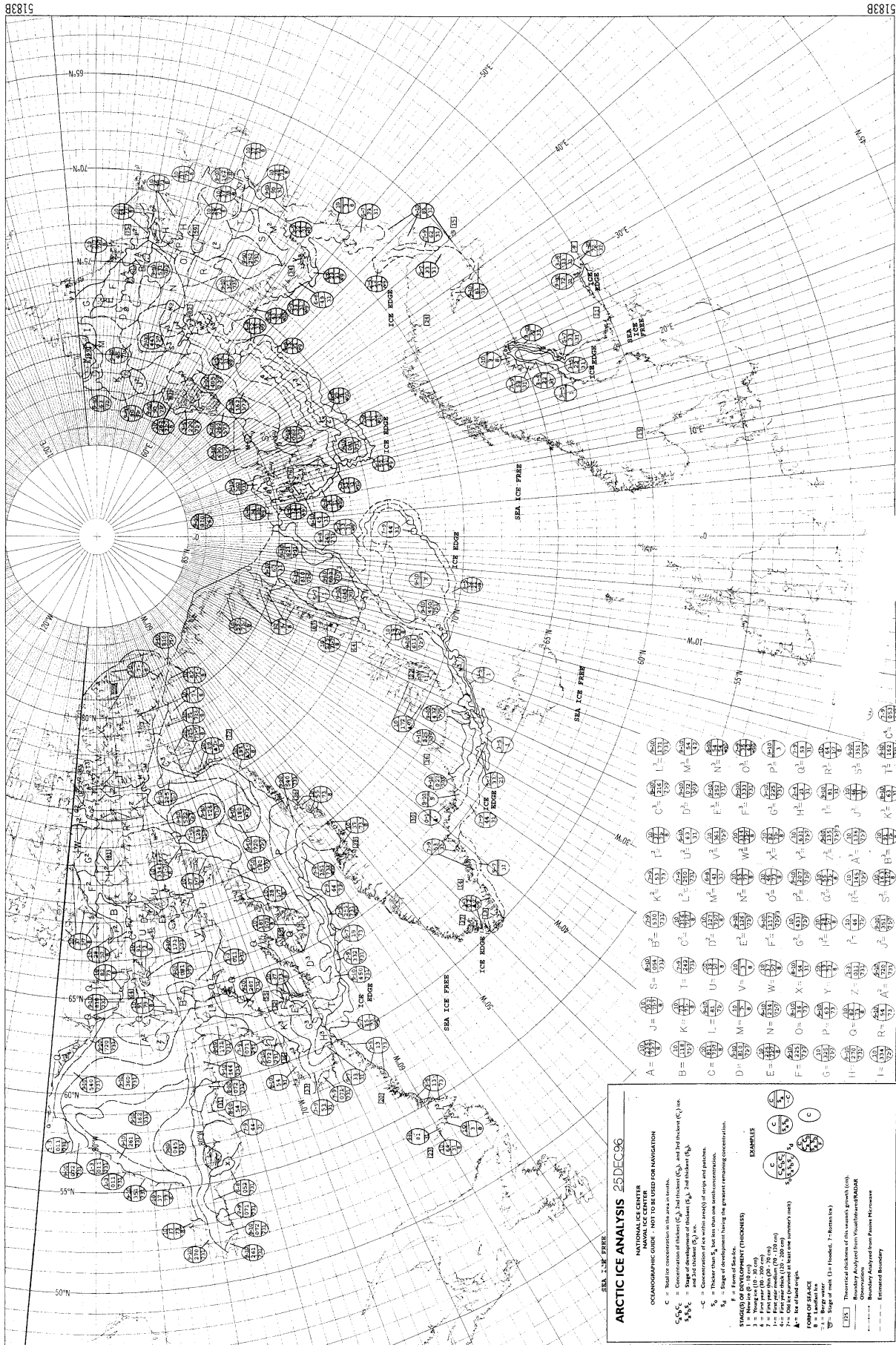
Legend:

- C = Total ice concentration in the area in tenths.
- C₁C₂C₃ = Concentration of thickest (C₁), 2nd thickest (C₂), and 3rd thickest (C₃) ice.
- S₁S₂S₃ = Stage of development of thickest (S₁), 2nd thickest (S₂), and 3rd thickest (S₃) ice.
- F = Form of ice.
- M = Mean ice age (in years).
- A = Ice of last origin.

FORM OF ICE:

- 1 = Young ice (0-15 days)
- 2 = Young ice (16-30 days)
- 3 = First year ice (31-70 days)
- 4 = First year ice (71-100 days)
- 5 = First year ice (101-150 days)
- 6 = First year ice (151-200 days)
- 7 = First year ice (201-250 days)
- 8 = First year ice (251-300 days)
- 9 = First year ice (301-350 days)
- 10 = First year ice (351-400 days)
- 11 = First year ice (401-450 days)
- 12 = First year ice (451-500 days)
- 13 = First year ice (501-550 days)
- 14 = First year ice (551-600 days)
- 15 = First year ice (601-650 days)
- 16 = First year ice (651-700 days)
- 17 = First year ice (701-750 days)
- 18 = First year ice (751-800 days)
- 19 = First year ice (801-850 days)
- 20 = First year ice (851-900 days)
- 21 = First year ice (901-950 days)
- 22 = First year ice (951-1000 days)
- 23 = First year ice (1001-1050 days)
- 24 = First year ice (1051-1100 days)
- 25 = First year ice (1101-1150 days)
- 26 = First year ice (1151-1200 days)
- 27 = First year ice (1201-1250 days)
- 28 = First year ice (1251-1300 days)
- 29 = First year ice (1301-1350 days)
- 30 = First year ice (1351-1400 days)
- 31 = First year ice (1401-1450 days)
- 32 = First year ice (1451-1500 days)
- 33 = First year ice (1501-1550 days)
- 34 = First year ice (1551-1600 days)
- 35 = First year ice (1601-1650 days)
- 36 = First year ice (1651-1700 days)
- 37 = First year ice (1701-1750 days)
- 38 = First year ice (1751-1800 days)
- 39 = First year ice (1801-1850 days)
- 40 = First year ice (1851-1900 days)
- 41 = First year ice (1901-1950 days)
- 42 = First year ice (1951-2000 days)
- 43 = First year ice (2001-2050 days)
- 44 = First year ice (2051-2100 days)
- 45 = First year ice (2101-2150 days)
- 46 = First year ice (2151-2200 days)
- 47 = First year ice (2201-2250 days)
- 48 = First year ice (2251-2300 days)
- 49 = First year ice (2301-2350 days)
- 50 = First year ice (2351-2400 days)
- 51 = First year ice (2401-2450 days)
- 52 = First year ice (2451-2500 days)
- 53 = First year ice (2501-2550 days)
- 54 = First year ice (2551-2600 days)
- 55 = First year ice (2601-2650 days)
- 56 = First year ice (2651-2700 days)
- 57 = First year ice (2701-2750 days)
- 58 = First year ice (2751-2800 days)
- 59 = First year ice (2801-2850 days)
- 60 = First year ice (2851-2900 days)
- 61 = First year ice (2901-2950 days)
- 62 = First year ice (2951-3000 days)
- 63 = First year ice (3001-3050 days)
- 64 = First year ice (3051-3100 days)
- 65 = First year ice (3101-3150 days)
- 66 = First year ice (3151-3200 days)
- 67 = First year ice (3201-3250 days)
- 68 = First year ice (3251-3300 days)
- 69 = First year ice (3301-3350 days)
- 70 = First year ice (3351-3400 days)
- 71 = First year ice (3401-3450 days)
- 72 = First year ice (3451-3500 days)
- 73 = First year ice (3501-3550 days)
- 74 = First year ice (3551-3600 days)
- 75 = First year ice (3601-3650 days)
- 76 = First year ice (3651-3700 days)
- 77 = First year ice (3701-3750 days)
- 78 = First year ice (3751-3800 days)
- 79 = First year ice (3801-3850 days)
- 80 = First year ice (3851-3900 days)
- 81 = First year ice (3901-3950 days)
- 82 = First year ice (3951-4000 days)
- 83 = First year ice (4001-4050 days)
- 84 = First year ice (4051-4100 days)
- 85 = First year ice (4101-4150 days)
- 86 = First year ice (4151-4200 days)
- 87 = First year ice (4201-4250 days)
- 88 = First year ice (4251-4300 days)
- 89 = First year ice (4301-4350 days)
- 90 = First year ice (4351-4400 days)
- 91 = First year ice (4401-4450 days)
- 92 = First year ice (4451-4500 days)
- 93 = First year ice (4501-4550 days)
- 94 = First year ice (4551-4600 days)
- 95 = First year ice (4601-4650 days)
- 96 = First year ice (4651-4700 days)
- 97 = First year ice (4701-4750 days)
- 98 = First year ice (4751-4800 days)
- 99 = First year ice (4801-4850 days)
- 100 = First year ice (4851-4900 days)
- 101 = First year ice (4901-4950 days)
- 102 = First year ice (4951-5000 days)
- 103 = First year ice (5001-5050 days)
- 104 = First year ice (5051-5100 days)
- 105 = First year ice (5101-5150 days)
- 106 = First year ice (5151-5200 days)
- 107 = First year ice (5201-5250 days)
- 108 = First year ice (5251-5300 days)
- 109 = First year ice (5301-5350 days)
- 110 = First year ice (5351-5400 days)
- 111 = First year ice (5401-5450 days)
- 112 = First year ice (5451-5500 days)
- 113 = First year ice (5501-5550 days)
- 114 = First year ice (5551-5600 days)
- 115 = First year ice (5601-5650 days)
- 116 = First year ice (5651-5700 days)
- 117 = First year ice (5701-5750 days)
- 118 = First year ice (5751-5800 days)
- 119 = First year ice (5801-5850 days)
- 120 = First year ice (5851-5900 days)
- 121 = First year ice (5901-5950 days)
- 122 = First year ice (5951-6000 days)
- 123 = First year ice (6001-6050 days)
- 124 = First year ice (6051-6100 days)
- 125 = First year ice (6101-6150 days)
- 126 = First year ice (6151-6200 days)
- 127 = First year ice (6201-6250 days)
- 128 = First year ice (6251-6300 days)
- 129 = First year ice (6301-6350 days)
- 130 = First year ice (6351-6400 days)
- 131 = First year ice (6401-6450 days)
- 132 = First year ice (6451-6500 days)
- 133 = First year ice (6501-6550 days)
- 134 = First year ice (6551-6600 days)
- 135 = First year ice (6601-6650 days)
- 136 = First year ice (6651-6700 days)
- 137 = First year ice (6701-6750 days)
- 138 = First year ice (6751-6800 days)
- 139 = First year ice (6801-6850 days)
- 140 = First year ice (6851-6900 days)
- 141 = First year ice (6901-6950 days)
- 142 = First year ice (6951-7000 days)
- 143 = First year ice (7001-7050 days)
- 144 = First year ice (7051-7100 days)
- 145 = First year ice (7101-7150 days)
- 146 = First year ice (7151-7200 days)
- 147 = First year ice (7201-7250 days)
- 148 = First year ice (7251-7300 days)
- 149 = First year ice (7301-7350 days)
- 150 = First year ice (7351-7400 days)
- 151 = First year ice (7401-7450 days)
- 152 = First year ice (7451-7500 days)
- 153 = First year ice (7501-7550 days)
- 154 = First year ice (7551-7600 days)
- 155 = First year ice (7601-7650 days)
- 156 = First year ice (7651-7700 days)
- 157 = First year ice (7701-7750 days)
- 158 = First year ice (7751-7800 days)
- 159 = First year ice (7801-7850 days)
- 160 = First year ice (7851-7900 days)
- 161 = First year ice (7901-7950 days)
- 162 = First year ice (7951-8000 days)
- 163 = First year ice (8001-8050 days)
- 164 = First year ice (8051-8100 days)
- 165 = First year ice (8101-8150 days)
- 166 = First year ice (8151-8200 days)
- 167 = First year ice (8201-8250 days)
- 168 = First year ice (8251-8300 days)
- 169 = First year ice (8301-8350 days)
- 170 = First year ice (8351-8400 days)
- 171 = First year ice (8401-8450 days)
- 172 = First year ice (8451-8500 days)
- 173 = First year ice (8501-8550 days)
- 174 = First year ice (8551-8600 days)
- 175 = First year ice (8601-8650 days)
- 176 = First year ice (8651-8700 days)
- 177 = First year ice (8701-8750 days)
- 178 = First year ice (8751-8800 days)
- 179 = First year ice (8801-8850 days)
- 180 = First year ice (8851-8900 days)
- 181 = First year ice (8901-8950 days)
- 182 = First year ice (8951-9000 days)
- 183 = First year ice (9001-9050 days)
- 184 = First year ice (9051-9100 days)
- 185 = First year ice (9101-9150 days)
- 186 = First year ice (9151-9200 days)
- 187 = First year ice (9201-9250 days)
- 188 = First year ice (9251-9300 days)
- 189 = First year ice (9301-9350 days)
- 190 = First year ice (9351-9400 days)
- 191 = First year ice (9401-9450 days)
- 192 = First year ice (9451-9500 days)
- 193 = First year ice (9501-9550 days)
- 194 = First year ice (9551-9600 days)
- 195 = First year ice (9601-9650 days)
- 196 = First year ice (9651-9700 days)
- 197 = First year ice (9701-9750 days)
- 198 = First year ice (9751-9800 days)
- 199 = First year ice (9801-9850 days)
- 200 = First year ice (9851-9900 days)
- 201 = First year ice (9901-9950 days)
- 202 = First year ice (9951-10000 days)

Refer to 1996 Special Arctic
Supplement for this Chart



ARCTIC ICE ANALYSIS 25 DEC 96

NATIONAL ICE CENTER

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C = Total ice concentration in the area in tenths

C₁C₂C₃ = Concentration of thickest (C₁), 2nd thickest (C₂), and 3rd thickest (C₃) ice

S₁S₂S₃ = Stage of development of thickest (S₁), 2nd thickest (S₂), and 3rd thickest (S₃) ice

T = Thickness (in feet) of single ice patches

S₀ = Thicker than S₁, but less than one continuous concentration

S₀ = Stage of development having the greatest remaining concentration

F = Form of Sea Ice

1 = Young ice (0-15 cm)

2 = Young ice (16-30 cm)

3 = First year thin (31-50 cm)

4 = First year thin (51-75 cm)

5 = First year thin (76-100 cm)

6 = First year thin (101-125 cm)

7 = First year thin (126-150 cm)

8 = First year thin (151-175 cm)

9 = First year thin (176-200 cm)

A = Ice of unknown origin

P = Point of Sea Ice

B = Landfast ice

W = Edge of pack

Q = Edge of pack

R = Edge of pack

S = Edge of pack

T = Edge of pack

U = Edge of pack

V = Edge of pack

W = Edge of pack

X = Edge of pack

Y = Edge of pack

Z = Edge of pack

A = Edge of pack

R = Edge of pack

A = Edge of pack

A = Edge of pack

A = Edge of pack

A = Edge of pack

A = Edge of pack

A = Edge of pack

A = Edge of pack